

SAFETY DATA SHEET

InterPlay Adenoviral TAP System, Part Number 240215

Section 1. Identification

1.1 Product identifier

Product name	: InterPlay Adenoviral TAP System, Part Number 240215	
Part No. (Chemical Kit)	: 240215	
Part No.	: β-Mercaptoethanol	240107-53
	Adenoviral pCTAP Shuttle Vector - A	240216-51
	Adenoviral pCTAP Shuttle Vector - B	240216-52
	pCTAP Shuttle vector-C	240216-53
	Adenoviral pTAP Shuttle-CAT Vector	240217-51
	pShuttle-CMV-lacZ Control Vector	240008-51
	AD-293 Cell Line >1 x 10e6 Viable Cells	240085-41
	BJ5183-AD-1 electroporation competent cells	200157-41
	Transformation Control	200157-42
	XL10-Gold Ultracompetent cells	200315-41
	XL10-Gold 2-Mercaptoethanol	200314-43
	pUC 18 DNA Control Plasmid	200231-42
	Lysis Buffer	240107-51
	0.5 M EDTA	240107-52
	Streptavidin Resin	240105-51
	Streptavidin Binding Buffer	240107-54
	Streptavidin Elution Buffer	240107-56
	Streptavidin Supernatant Supplement	240107-57
	MS-Grade Calmodulin Resin	240106-51
	Calmodulin Binding Buffer	240107-58
	Calmodulin Elution Buffer	240107-59

Validation date : 1/23/2018

1.2 Relevant identified uses of the substance or mixture and uses advised against

Material uses	: Analytical reagent.	
	β-Mercaptoethanol	0.75 ml (69 µl 14.4 M)
	Adenoviral pCTAP Shuttle Vector - A	0.02 ml (20 µg 1 µg/µl)
	Adenoviral pCTAP Shuttle Vector - B	0.02 ml (20 µg 1 µg/µl)
	pCTAP Shuttle vector-C	0.02 ml
	Adenoviral pTAP Shuttle-CAT Vector	0.02 ml (20 µg 1 µg/µl)
	pShuttle-CMV-lacZ Control Vector	0.01 ml (10 µg 1 µg/µl)
	AD-293 Cell Line >1 x 10e6 Viable Cells	1 ml
	BJ5183-AD-1 electroporation competent cells	0.5 ml
	Transformation Control	0.01 ml (0.1 ng/µl 10 µl)
	XL10-Gold Ultracompetent cells	0.5 ml
	XL10-Gold 2-Mercaptoethanol	0.5 ml
	pUC 18 DNA Control Plasmid	0.01 ml (0.1 ng/µl)
	Lysis Buffer	50 ml
	0.5 M EDTA	0.2 ml
	Streptavidin Resin	1.25 ml
	Streptavidin Binding Buffer	25 ml
	Streptavidin Elution Buffer	5 ml
	Streptavidin Supernatant Supplement	0.1 ml
	MS-Grade Calmodulin Resin	0.625 ml
	Calmodulin Binding Buffer	40 ml
	Calmodulin Elution Buffer	2.5 ml

1.3 Details of the supplier of the safety data sheet

Section 1. Identification

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status	:  -Mercaptoethanol	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	Adenoviral pCTAP Shuttle Vector - A	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	Adenoviral pCTAP Shuttle Vector - B	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	pCTAP Shuttle vector-C	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	Adenoviral pTAP Shuttle-CAT Vector	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	pShuttle-CMV-lacZ Control Vector	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	AD-293 Cell Line >1 x 10e6 Viable Cells BJ5183-AD-1 electroporation competent cells	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	Transformation Control	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

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XL10-Gold Ultracompetent cells	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
XL10-Gold	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
2-Mercaptoethanol	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
pUC 18 DNA Control Plasmid	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Lysis Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
0.5 M EDTA	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Streptavidin Resin	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Streptavidin Binding Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Streptavidin Elution Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Streptavidin Supernatant Supplement	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
MS-Grade Calmodulin Resin	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Calmodulin Binding Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Calmodulin Elution Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

2-Mercaptoethanol

H227	FLAMMABLE LIQUIDS - Category 4
H301	ACUTE TOXICITY (oral) - Category 3
H310	ACUTE TOXICITY (dermal) - Category 2
H330	ACUTE TOXICITY (inhalation) - Category 2
H315	SKIN IRRITATION - Category 2
H318	SERIOUS EYE DAMAGE - Category 1
H317	SKIN SENSITIZATION - Category 1
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract)

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irritation) - Category 3

AD-293 Cell Line >1 x 10e6

Viable Cells

H320 EYE IRRITATION - Category 2B

XL10-Gold Ultracompetent cells

H320 EYE IRRITATION - Category 2B

XL10-Gold 2-Mercaptoethanol

H318 SERIOUS EYE DAMAGE - Category 1

H317 SKIN SENSITIZATION - Category 1

0.5 M EDTA

H319 EYE IRRITATION - Category 2A

Streptavidin Resin

H226 FLAMMABLE LIQUIDS - Category 3

H319 EYE IRRITATION - Category 2A

H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2

Streptavidin Supernatant Supplement

H360 TOXIC TO REPRODUCTION (Unborn child) - Category 1B

MS-Grade Calmodulin Resin

H226 FLAMMABLE LIQUIDS - Category 3

H319 EYE IRRITATION - Category 2A

H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2

Ingredients of unknown toxicity

<ul style="list-style-type: none"> ☑ J5183-AD-1 electroporation competent cells XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol 0.5 M EDTA Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin 	<ul style="list-style-type: none"> Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 10 - 30% Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 10 - 30% Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
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Section 2. Hazards identification

2.2 GHS label elements

Hazard pictograms

<input checked="" type="checkbox"/> β-Mercaptoethanol			
XL10-Gold 2-Mercaptoethanol			
0.5 M EDTA			
Streptavidin Resin			
Streptavidin Supernatant Supplement			
MS-Grade Calmodulin Resin			

Signal word

<input checked="" type="checkbox"/> β-Mercaptoethanol	Danger
Adenoviral pCTAP Shuttle Vector - A	No signal word.
Adenoviral pCTAP Shuttle Vector - B	No signal word.
pCTAP Shuttle vector-C	No signal word.
Adenoviral pTAP Shuttle-CAT Vector	No signal word.
pShuttle-CMV-lacZ Control Vector	No signal word.
AD-293 Cell Line >1 x 10e6 Viable Cells	Warning
BJ5183-AD-1 electroporation competent cells	No signal word.
Transformation Control	No signal word.
XL10-Gold Ultracompetent cells	Warning
XL10-Gold 2-Mercaptoethanol	Danger
pUC 18 DNA Control Plasmid	No signal word.
Lysis Buffer	No signal word.
0.5 M EDTA	Warning
Streptavidin Resin	Warning
Streptavidin Binding Buffer	No signal word.
Streptavidin Elution Buffer	No signal word.
Streptavidin Supernatant Supplement	Danger
MS-Grade Calmodulin Resin	Warning
Calmodulin Binding Buffer	No signal word.
Calmodulin Elution Buffer	No signal word.

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Hazard statements

:  Mercaptoethanol

H227 - Combustible liquid.
 H310 + H330 - Fatal in contact with skin or if inhaled.
 H301 - Toxic if swallowed.
 H318 - Causes serious eye damage.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H335 - May cause respiratory irritation.

Adenoviral pCTAP Shuttle Vector - A No known significant effects or critical hazards.

Adenoviral pCTAP Shuttle Vector - B No known significant effects or critical hazards.

pCTAP Shuttle vector-C No known significant effects or critical hazards.

Adenoviral pTAP Shuttle-CAT Vector No known significant effects or critical hazards.

pShuttle-CMV-lacZ Control Vector No known significant effects or critical hazards.

AD-293 Cell Line >1 x 10e6 Viable Cells H320 - Causes eye irritation.

BJ5183-AD-1 electroporation competent cells No known significant effects or critical hazards.

Transformation Control No known significant effects or critical hazards.

XL10-Gold Ultracompetent cells H320 - Causes eye irritation.

XL10-Gold 2-Mercaptoethanol H318 - Causes serious eye damage.

H317 - May cause an allergic skin reaction.

pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Lysis Buffer No known significant effects or critical hazards.

0.5 M EDTA H319 - Causes serious eye irritation.

Streptavidin Resin H226 - Flammable liquid and vapor.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

H336 - May cause drowsiness or dizziness.

H373 - May cause damage to organs through prolonged or repeated exposure. (liver)

Streptavidin Binding Buffer No known significant effects or critical hazards.

Streptavidin Elution Buffer No known significant effects or critical hazards.

Streptavidin Supernatant Supplement H360 - May damage the unborn child.

MS-Grade Calmodulin Resin

H226 - Flammable liquid and vapor.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

H336 - May cause drowsiness or dizziness.

H373 - May cause damage to organs through prolonged or repeated exposure. (liver)

Calmodulin Binding Buffer No known significant effects or critical hazards.

Calmodulin Elution Buffer No known significant effects or critical hazards.

Precautionary statements

Prevention

:  Mercaptoethanol

P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
 P284 - Wear respiratory protection.
 P210 - Keep away from flames and hot surfaces. - No smoking.
 P271 - Use only outdoors or in a well-ventilated area.
 P262 - Do not get in eyes, on skin, or on clothing.
 P260 - Do not breathe vapor.
 P270 - Do not eat, drink or smoke when using this product.
 P264 - Wash hands thoroughly after handling.
 P272 (OSHA) - Contaminated work clothing must

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	not be allowed out of the workplace.
Adenoviral pCTAP Shuttle Vector - A	Not applicable.
Adenoviral pCTAP Shuttle Vector - B	Not applicable.
pCTAP Shuttle vector-C	Not applicable.
Adenoviral pTAP Shuttle-CAT Vector	Not applicable.
pShuttle-CMV-lacZ Control Vector	Not applicable.
AD-293 Cell Line >1 x 10e6 Viable Cells	P264 - Wash hands thoroughly after handling.
BJ5183-AD-1 electroporation competent cells	Not applicable.
Transformation Control	Not applicable.
XL10-Gold Ultracompetent cells	P264 - Wash hands thoroughly after handling.
XL10-Gold 2-Mercaptoethanol	P280 - Wear protective gloves. Wear eye or face protection. P261 - Avoid breathing vapor. P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
pUC 18 DNA Control Plasmid	Not applicable.
Lysis Buffer	Not applicable.
0.5 M EDTA	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
Streptavidin Resin	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling.
Streptavidin Binding Buffer	Not applicable.
Streptavidin Elution Buffer	Not applicable.
Streptavidin Supernatant Supplement	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
MS-Grade Calmodulin Resin	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated

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Response

<p>Calmodulin Binding Buffer Calmodulin Elution Buffer</p>	<p>: <input checked="" type="checkbox"/> Mercaptoethanol</p>	<p>area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling. Not applicable. Not applicable. P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P330 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. P302 + P361+P364 + P352 + P310 + P363 - IF ON SKIN: Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of soap and water. Immediately call a POISON CENTER or physician. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.</p>
<p>Adenoviral pCTAP Shuttle Vector - A Adenoviral pCTAP Shuttle Vector - B pCTAP Shuttle vector-C Adenoviral pTAP Shuttle-CAT Vector pShuttle-CMV-lacZ Control Vector AD-293 Cell Line >1 x 10e6 Viable Cells</p>	<p>Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.</p>	<p>Not applicable. Not applicable. Not applicable. Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.</p>
<p>BJ5183-AD-1 electroporation competent cells Transformation Control XL10-Gold Ultracompetent cells</p>	<p>Not applicable.</p>	<p>Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.</p>
<p>XL10-Gold 2-Mercaptoethanol</p>	<p></p>	<p>P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.</p>
<p>pUC 18 DNA Control Plasmid</p>	<p></p>	<p>Not applicable.</p>

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	Lysis Buffer 0.5 M EDTA	Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	Streptavidin Resin	P314 - Get medical attention if you feel unwell. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin	Not applicable. Not applicable. P308 + P313 - IF exposed or concerned: Get medical attention. P314 - Get medical attention if you feel unwell. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Storage	Calmodulin Binding Buffer Calmodulin Elution Buffer : <input checked="" type="checkbox"/> Mercaptoethanol	Not applicable. Not applicable. P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
	Adenoviral pCTAP Shuttle Vector - A	Not applicable.
	Adenoviral pCTAP Shuttle Vector - B	Not applicable.
	pCTAP Shuttle vector-C	Not applicable.
	Adenoviral pTAP Shuttle-CAT Vector	Not applicable.
	pShuttle-CMV-lacZ Control Vector	Not applicable.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
	BJ5183-AD-1 electroporation competent cells	Not applicable.
	Transformation Control	Not applicable.
	XL10-Gold Ultracompetent cells	Not applicable.
	XL10-Gold 2-Mercaptoethanol	Not applicable.

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	pUC 18 DNA Control Plasmid	Not applicable.
	Lysis Buffer	Not applicable.
	0.5 M EDTA	Not applicable.
	Streptavidin Resin	P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
	Streptavidin Binding Buffer	Not applicable.
	Streptavidin Elution Buffer	Not applicable.
	Streptavidin Supernatant Supplement	P405 - Store locked up.
	MS-Grade Calmodulin Resin	P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
	Calmodulin Binding Buffer	Not applicable.
	Calmodulin Elution Buffer	Not applicable.
Disposal	: β -Mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Adenoviral pCTAP Shuttle Vector - A	Not applicable.
	Adenoviral pCTAP Shuttle Vector - B	Not applicable.
	pCTAP Shuttle vector-C	Not applicable.
	Adenoviral pTAP Shuttle-CAT Vector	Not applicable.
	pShuttle-CMV-lacZ Control Vector	Not applicable.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
	BJ5183-AD-1 electroporation competent cells	Not applicable.
	Transformation Control	Not applicable.
	XL10-Gold Ultracompetent cells	Not applicable.
	XL10-Gold 2-Mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	pUC 18 DNA Control Plasmid	Not applicable.
	Lysis Buffer	Not applicable.
	0.5 M EDTA	Not applicable.
	Streptavidin Resin	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Streptavidin Binding Buffer	Not applicable.
	Streptavidin Elution Buffer	Not applicable.
	Streptavidin Supernatant Supplement	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	MS-Grade Calmodulin Resin	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Calmodulin Binding Buffer	Not applicable.
	Calmodulin Elution Buffer	Not applicable.
Supplemental label elements	: β -Mercaptoethanol	None known.
	Adenoviral pCTAP Shuttle Vector - A	None known.
	Adenoviral pCTAP Shuttle Vector - B	None known.
	pCTAP Shuttle vector-C	None known.
	Adenoviral pTAP Shuttle-CAT Vector	None known.

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pShuttle-CMV-lacZ Control Vector	None known.
AD-293 Cell Line >1 x 10e6 Viable Cells	None known.
BJ5183-AD-1 electroporation competent cells	None known.
Transformation Control	None known.
XL10-Gold Ultracompetent cells	None known.
XL10-Gold 2-Mercaptoethanol	None known.
pUC 18 DNA Control Plasmid	None known.
Lysis Buffer	None known.
0.5 M EDTA	None known.
Streptavidin Resin	None known.
Streptavidin Binding Buffer	None known.
Streptavidin Elution Buffer	None known.
Streptavidin Supernatant Supplement	None known.
MS-Grade Calmodulin Resin	None known.
Calmodulin Binding Buffer	None known.
Calmodulin Elution Buffer	None known.

2.3 Other hazards

Hazards not otherwise classified

: β -Mercaptoethanol	None known.
Adenoviral pCTAP Shuttle Vector - A	None known.
Adenoviral pCTAP Shuttle Vector - B	None known.
pCTAP Shuttle vector-C	None known.
Adenoviral pTAP Shuttle-CAT Vector	None known.
pShuttle-CMV-lacZ Control Vector	None known.
AD-293 Cell Line >1 x 10e6 Viable Cells	None known.
BJ5183-AD-1 electroporation competent cells	None known.
Transformation Control	None known.
XL10-Gold Ultracompetent cells	None known.
XL10-Gold 2-Mercaptoethanol	None known.
pUC 18 DNA Control Plasmid	None known.
Lysis Buffer	None known.
0.5 M EDTA	None known.
Streptavidin Resin	None known.
Streptavidin Binding Buffer	None known.
Streptavidin Elution Buffer	None known.
Streptavidin Supernatant Supplement	None known.
MS-Grade Calmodulin Resin	None known.
Calmodulin Binding Buffer	None known.
Calmodulin Elution Buffer	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	β -Mercaptoethanol	Substance
		Adenoviral pCTAP Shuttle Vector - A	Mixture
		Adenoviral pCTAP Shuttle Vector - B	Mixture
		pCTAP Shuttle vector-C	Mixture
		Adenoviral pTAP Shuttle-CAT Vector	Mixture
		pShuttle-CMV-lacZ Control Vector	Mixture
		AD-293 Cell Line >1 x 10e6 Viable Cells	Mixture
		BJ5183-AD-1 electroporation	Mixture

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competent cells	
Transformation Control	Mixture
XL10-Gold Ultracompetent cells	Mixture
XL10-Gold 2-Mercaptoethanol	Mixture
pUC 18 DNA Control Plasmid	Mixture
Lysis Buffer	Mixture
0.5 M EDTA	Mixture
Streptavidin Resin	Mixture
Streptavidin Binding Buffer	Mixture
Streptavidin Elution Buffer	Mixture
Streptavidin Supernatant Supplement	Mixture
MS-Grade Calmodulin Resin	Mixture
Calmodulin Binding Buffer	Mixture
Calmodulin Elution Buffer	Mixture

Ingredient name	%	CAS number
β-Mercaptoethanol 2-Mercaptoethanol	100	60-24-2
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	≥10 - ≤25	67-68-5
BJ5183-AD-1 electroporation competent cells Glycerol	<10	56-81-5
XL10-Gold Ultracompetent cells Glycerol Dimethyl sulfoxide Potassium chloride	≥10 - ≤25 ≤10 ≤3	56-81-5 67-68-5 7447-40-7
XL10-Gold 2-Mercaptoethanol Sodium chloride 2-Mercaptoethanol	≥10 - ≤25 ≤5	7647-14-5 60-24-2
0.5 M EDTA Edetic acid	≥10 - ≤25	60-00-4
Streptavidin Resin Ethanol	≥10 - ≤25	64-17-5
Streptavidin Supernatant Supplement calcium chloride Imidazole	≤3 <1	10043-52-4 288-32-4
MS-Grade Calmodulin Resin Ethanol Sodium chloride	≥10 - ≤25 ≤3	64-17-5 7647-14-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	:  -Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Adenoviral pCTAP Shuttle Vector - A		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Adenoviral pCTAP Shuttle Vector - B		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
pCTAP Shuttle vector-C		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Adenoviral pTAP Shuttle-CAT Vector		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
pShuttle-CMV-lacZ Control Vector		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
AD-293 Cell Line >1 x 10e6 Viable Cells		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
BJ5183-AD-1 electroporation competent cells		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Transformation Control		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
XL10-Gold Ultracompetent cells		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
XL10-Gold 2-Mercaptoethanol		Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
pUC 18 DNA Control Plasmid		Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Lysis Buffer		Immediately flush eyes with plenty of water,

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		occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	0.5 M EDTA	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	Streptavidin Resin	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	Streptavidin Binding Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Streptavidin Elution Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Streptavidin Supernatant Supplement	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
	MS-Grade Calmodulin Resin	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	Calmodulin Binding Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Calmodulin Elution Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	:  -Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	Adenoviral pCTAP Shuttle Vector - A	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Adenoviral pCTAP Shuttle Vector - B	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical

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pCTAP Shuttle vector-C	attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Adenoviral pTAP Shuttle-CAT Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
pShuttle-CMV-lacZ Control Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
AD-293 Cell Line >1 x 10e6 Viable Cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
BJ5183-AD-1 electroporation competent cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Transformation Control	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
XL10-Gold Ultracompetent cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
pUC 18 DNA Control Plasmid	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Lysis Buffer	Remove victim to fresh air and keep at rest in a

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0.5 M EDTA

position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Streptavidin Resin

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Streptavidin Binding Buffer

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Streptavidin Elution Buffer

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Streptavidin Supernatant Supplement

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

MS-Grade Calmodulin Resin

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth

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resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Get medical attention immediately. Call a poison center or physician. Gently wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must

Skin contact

: -Mercaptoethanol

Calmodulin Binding Buffer

Calmodulin Elution Buffer

Adenoviral pCTAP Shuttle Vector - A

Adenoviral pCTAP Shuttle Vector - B

pCTAP Shuttle vector-C

Adenoviral pTAP Shuttle-CAT Vector

pShuttle-CMV-lacZ Control Vector

AD-293 Cell Line >1 x 10e6 Viable Cells

BJ5183-AD-1 electroporation competent cells

Transformation Control

XL10-Gold Ultracompetent cells

XL10-Gold 2-Mercaptoethanol

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	be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Lysis Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
0.5 M EDTA	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Streptavidin Resin	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Streptavidin Binding Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Streptavidin Elution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Streptavidin Supernatant Supplement	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
MS-Grade Calmodulin Resin	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Calmodulin Binding Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Calmodulin Elution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion

: -Mercaptoethanol

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an

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Adenoviral pCTAP Shuttle Vector - A	unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Adenoviral pCTAP Shuttle Vector - B	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
pCTAP Shuttle vector-C	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Adenoviral pTAP Shuttle-CAT Vector	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
pShuttle-CMV-lacZ Control Vector	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
AD-293 Cell Line >1 x 10e6 Viable Cells	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
BJ5183-AD-1 electroporation competent cells	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small

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Transformation Control	quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
XL10-Gold Ultracompetent cells	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
pUC 18 DNA Control Plasmid	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Lysis Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
0.5 M EDTA	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in

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	<p>a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>
Streptavidin Resin	<p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>
Streptavidin Binding Buffer	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p>
Streptavidin Elution Buffer	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p>
Streptavidin Supernatant Supplement	<p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>

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MS-Grade Calmodulin Resin	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Calmodulin Binding Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Calmodulin Elution Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact

: β -Mercaptoethanol	Causes serious eye damage.
Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
pCTAP Shuttle vector-C	No known significant effects or critical hazards.
Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
AD-293 Cell Line >1 x 10 ⁶ Viable Cells	Causes eye irritation.
BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.
XL10-Gold Ultracompetent cells	Causes eye irritation.
XL10-Gold 2-Mercaptoethanol	Causes serious eye damage.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Lysis Buffer	No known significant effects or critical hazards.
0.5 M EDTA	Causes serious eye irritation.
Streptavidin Resin	Causes serious eye irritation.
Streptavidin Binding Buffer	No known significant effects or critical hazards.
Streptavidin Elution Buffer	No known significant effects or critical hazards.
Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
MS-Grade Calmodulin Resin	Causes serious eye irritation.

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Inhalation	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
	: β -Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
MS-Grade Calmodulin Resin	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.	
Calmodulin Binding Buffer	No known significant effects or critical hazards.	
Calmodulin Elution Buffer	No known significant effects or critical hazards.	
Skin contact	: β -Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	May cause an allergic skin reaction.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	No known significant effects or critical hazards.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.

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	MS-Grade Calmodulin Resin	No known significant effects or critical hazards.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Ingestion	: β -Mercaptoethanol	Toxic if swallowed.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	Can cause central nervous system (CNS) depression.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
	MS-Grade Calmodulin Resin	Can cause central nervous system (CNS) depression.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: β -Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	Adenoviral pCTAP Shuttle Vector - A	No specific data.
	Adenoviral pCTAP Shuttle Vector - B	No specific data.
	pCTAP Shuttle vector-C	No specific data.
	Adenoviral pTAP Shuttle-CAT Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Adverse symptoms may include the following: irritation watering redness
	BJ5183-AD-1 electroporation competent cells	No specific data.
	Transformation Control	No specific data.
	XL10-Gold Ultracompetent cells	Adverse symptoms may include the following: irritation watering redness
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following:

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		pain watering redness
	pUC 18 DNA Control Plasmid Lysis Buffer 0.5 M EDTA	No specific data. No specific data. Adverse symptoms may include the following: pain or irritation watering redness
	Streptavidin Resin	Adverse symptoms may include the following: pain or irritation watering redness
	Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin	No specific data. No specific data. No specific data. Adverse symptoms may include the following: pain or irritation watering redness
	Calmodulin Binding Buffer Calmodulin Elution Buffer	No specific data. No specific data.
Inhalation	:  -Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
	Adenoviral pCTAP Shuttle Vector - A	No specific data.
	Adenoviral pCTAP Shuttle Vector - B	No specific data.
	pCTAP Shuttle vector-C	No specific data.
	Adenoviral pTAP Shuttle-CAT Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	Transformation Control	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement	No specific data. No specific data. Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

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	MS-Grade Calmodulin Resin	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
Skin contact	: <input checked="" type="checkbox"/> -Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	Adenoviral pCTAP Shuttle Vector - A	No specific data.
	Adenoviral pCTAP Shuttle Vector - B	No specific data.
	pCTAP Shuttle vector-C	No specific data.
	Adenoviral pTAP Shuttle-CAT Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	Transformation Control	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	pUC 18 DNA Control Plasmid	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	No specific data.
	Streptavidin Binding Buffer	No specific data.
	Streptavidin Elution Buffer	No specific data.
	Streptavidin Supernatant Supplement	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	MS-Grade Calmodulin Resin	No specific data.
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
Ingestion	: <input checked="" type="checkbox"/> -Mercaptoethanol	Adverse symptoms may include the following: stomach pains
	Adenoviral pCTAP Shuttle Vector - A	No specific data.
	Adenoviral pCTAP Shuttle Vector - B	No specific data.
	pCTAP Shuttle vector-C	No specific data.
	Adenoviral pTAP Shuttle-CAT Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.

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BJ5183-AD-1 electroporation competent cells	No specific data.
Transformation Control	No specific data.
XL10-Gold Ultracompetent cells	No specific data.
XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: stomach pains
pUC 18 DNA Control Plasmid	No specific data.
Lysis Buffer	No specific data.
0.5 M EDTA	No specific data.
Streptavidin Resin	No specific data.
Streptavidin Binding Buffer	No specific data.
Streptavidin Elution Buffer	No specific data.
Streptavidin Supernatant Supplement	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
MS-Grade Calmodulin Resin	No specific data.
Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: β -Mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Adenoviral pCTAP Shuttle Vector - A	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Adenoviral pCTAP Shuttle Vector - B	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pCTAP Shuttle vector-C	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Adenoviral pTAP Shuttle-CAT Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pShuttle-CMV-lacZ Control Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	BJ5183-AD-1 electroporation competent cells	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Transformation Control	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL10-Gold Ultracompetent cells	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL10-Gold 2-Mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pUC 18 DNA Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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Lysis Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
0.5 M EDTA	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Streptavidin Resin	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Streptavidin Binding Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Streptavidin Elution Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Streptavidin Supernatant Supplement	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
MS-Grade Calmodulin Resin	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Calmodulin Binding Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Calmodulin Elution Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments

: β -Mercaptoethanol	No specific treatment.
Adenoviral pCTAP Shuttle Vector - A	No specific treatment.
Adenoviral pCTAP Shuttle Vector - B	No specific treatment.
pCTAP Shuttle vector-C	No specific treatment.
Adenoviral pTAP Shuttle-CAT Vector	No specific treatment.
pShuttle-CMV-lacZ Control Vector	No specific treatment.
AD-293 Cell Line >1 x 10 ⁶ Viable Cells	No specific treatment.
BJ5183-AD-1 electroporation competent cells	No specific treatment.
Transformation Control	No specific treatment.
XL10-Gold Ultracompetent cells	No specific treatment.
XL10-Gold 2-Mercaptoethanol	No specific treatment.
pUC 18 DNA Control Plasmid	No specific treatment.
Lysis Buffer	No specific treatment.
0.5 M EDTA	No specific treatment.
Streptavidin Resin	No specific treatment.
Streptavidin Binding Buffer	No specific treatment.
Streptavidin Elution Buffer	No specific treatment.
Streptavidin Supernatant Supplement	No specific treatment.
MS-Grade Calmodulin Resin	No specific treatment.
Calmodulin Binding Buffer	No specific treatment.
Calmodulin Elution Buffer	No specific treatment.

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Protection of first-aiders : -Mercaptoethanol

	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Adenoviral pCTAP Shuttle Vector - A	No action shall be taken involving any personal risk or without suitable training.
Adenoviral pCTAP Shuttle Vector - B	No action shall be taken involving any personal risk or without suitable training.
pCTAP Shuttle vector-C	No action shall be taken involving any personal risk or without suitable training.
Adenoviral pTAP Shuttle-CAT Vector	No action shall be taken involving any personal risk or without suitable training.
pShuttle-CMV-lacZ Control Vector	No action shall be taken involving any personal risk or without suitable training.
AD-293 Cell Line >1 x 10e6 Viable Cells	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
BJ5183-AD-1 electroporation competent cells	No action shall be taken involving any personal risk or without suitable training.
Transformation Control	No action shall be taken involving any personal risk or without suitable training.
XL10-Gold Ultracompetent cells	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
XL10-Gold 2-Mercaptoethanol	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training.
Lysis Buffer	No action shall be taken involving any personal risk or without suitable training.
0.5 M EDTA	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Streptavidin Resin	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Streptavidin Binding Buffer	No action shall be taken involving any personal risk or without suitable training.
Streptavidin Elution Buffer	No action shall be taken involving any personal risk or without suitable training.
Streptavidin Supernatant Supplement	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an

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MS-Grade Calmodulin Resin	appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Calmodulin Binding Buffer	No action shall be taken involving any personal risk or without suitable training.
Calmodulin Elution Buffer	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

: β -Mercaptoethanol	Use dry chemical, CO ₂ , water spray (fog) or foam.
Adenoviral pCTAP Shuttle Vector - A	Use an extinguishing agent suitable for the surrounding fire.
Adenoviral pCTAP Shuttle Vector - B	Use an extinguishing agent suitable for the surrounding fire.
pCTAP Shuttle vector-C	Use an extinguishing agent suitable for the surrounding fire.
Adenoviral pTAP Shuttle-CAT Vector	Use an extinguishing agent suitable for the surrounding fire.
pShuttle-CMV-lacZ Control Vector	Use an extinguishing agent suitable for the surrounding fire.
AD-293 Cell Line >1 x 10e6 Viable Cells	Use an extinguishing agent suitable for the surrounding fire.
BJ5183-AD-1 electroporation competent cells	Use an extinguishing agent suitable for the surrounding fire.
Transformation Control	Use an extinguishing agent suitable for the surrounding fire.
XL10-Gold Ultracompetent cells	Use an extinguishing agent suitable for the surrounding fire.
XL10-Gold 2-Mercaptoethanol	Use an extinguishing agent suitable for the surrounding fire.
pUC 18 DNA Control Plasmid	Use an extinguishing agent suitable for the surrounding fire.
Lysis Buffer	Use an extinguishing agent suitable for the surrounding fire.
0.5 M EDTA	Use an extinguishing agent suitable for the surrounding fire.
Streptavidin Resin	Use dry chemical, CO ₂ , water spray (fog) or foam.
Streptavidin Binding Buffer	Use an extinguishing agent suitable for the surrounding fire.
Streptavidin Elution Buffer	Use an extinguishing agent suitable for the surrounding fire.
Streptavidin Supernatant Supplement	Use an extinguishing agent suitable for the surrounding fire.
MS-Grade Calmodulin Resin	Use dry chemical, CO ₂ , water spray (fog) or foam.
Calmodulin Binding Buffer	Use an extinguishing agent suitable for the surrounding fire.
Calmodulin Elution Buffer	Use an extinguishing agent suitable for the

Section 5. Fire-fighting measures

Unsuitable extinguishing media

: β -Mercaptoethanol	surrounding fire.
Adenoviral pCTAP Shuttle Vector - A	Do not use water jet.
Adenoviral pCTAP Shuttle Vector - B	None known.
pCTAP Shuttle vector-C	None known.
Adenoviral pTAP Shuttle-CAT Vector	None known.
pShuttle-CMV-lacZ Control Vector	None known.
AD-293 Cell Line >1 x 10e6 Viable Cells	None known.
BJ5183-AD-1 electroporation competent cells	None known.
Transformation Control	None known.
XL10-Gold Ultracompetent cells	None known.
XL10-Gold 2-Mercaptoethanol	None known.
pUC 18 DNA Control Plasmid	None known.
Lysis Buffer	None known.
0.5 M EDTA	None known.
Streptavidin Resin	Do not use water jet.
Streptavidin Binding Buffer	None known.
Streptavidin Elution Buffer	None known.
Streptavidin Supernatant Supplement	None known.
MS-Grade Calmodulin Resin	Do not use water jet.
Calmodulin Binding Buffer	None known.
Calmodulin Elution Buffer	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical

: β -Mercaptoethanol	Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
Adenoviral pCTAP Shuttle Vector - A	In a fire or if heated, a pressure increase will occur and the container may burst.
Adenoviral pCTAP Shuttle Vector - B	In a fire or if heated, a pressure increase will occur and the container may burst.
pCTAP Shuttle vector-C	In a fire or if heated, a pressure increase will occur and the container may burst.
Adenoviral pTAP Shuttle-CAT Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
pShuttle-CMV-lacZ Control Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
AD-293 Cell Line >1 x 10e6 Viable Cells	In a fire or if heated, a pressure increase will occur and the container may burst.
BJ5183-AD-1 electroporation competent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
Transformation Control	In a fire or if heated, a pressure increase will occur and the container may burst.
XL10-Gold Ultracompetent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
XL10-Gold 2-Mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst.

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pUC 18 DNA Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.
Lysis Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
0.5 M EDTA	In a fire or if heated, a pressure increase will occur and the container may burst.
Streptavidin Resin	Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
Streptavidin Binding Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Streptavidin Elution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Streptavidin Supernatant Supplement	In a fire or if heated, a pressure increase will occur and the container may burst.
MS-Grade Calmodulin Resin	Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
Calmodulin Binding Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Calmodulin Elution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products : β -Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
Adenoviral pCTAP Shuttle Vector - A	No specific data.
Adenoviral pCTAP Shuttle Vector - B	No specific data.
pCTAP Shuttle vector-C	No specific data.
Adenoviral pTAP Shuttle-CAT Vector	No specific data.
pShuttle-CMV-lacZ Control Vector	No specific data.
AD-293 Cell Line >1 x 10e6 Viable Cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
BJ5183-AD-1 electroporation competent cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Transformation Control	No specific data.
XL10-Gold Ultracompetent cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
XL10-Gold 2-Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide

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	carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
pUC 18 DNA Control Plasmid	No specific data.
Lysis Buffer	No specific data.
0.5 M EDTA	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
Streptavidin Resin	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Streptavidin Binding Buffer	No specific data.
Streptavidin Elution Buffer	No specific data.
Streptavidin Supernatant Supplement	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
MS-Grade Calmodulin Resin	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters

: β -Mercaptoethanol	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Adenoviral pCTAP Shuttle Vector - A	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Adenoviral pCTAP Shuttle Vector - B	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
pCTAP Shuttle vector-C	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Adenoviral pTAP Shuttle-CAT Vector	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
pShuttle-CMV-lacZ Control Vector	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or

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AD-293 Cell Line >1 x 10e6 Viable Cells	without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
BJ5183-AD-1 electroporation competent cells	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Transformation Control	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
XL10-Gold Ultracompetent cells	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
XL10-Gold 2-Mercaptoethanol	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
pUC 18 DNA Control Plasmid	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Lysis Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
0.5 M EDTA	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Streptavidin Resin	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Streptavidin Binding Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Streptavidin Elution Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Streptavidin Supernatant Supplement	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
MS-Grade Calmodulin Resin	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Calmodulin Binding Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No

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Special protective equipment for fire-fighters

Calmodulin Elution Buffer	action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
: β -Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Adenoviral pCTAP Shuttle Vector - A	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Adenoviral pCTAP Shuttle Vector - B	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
pCTAP Shuttle vector-C	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Adenoviral pTAP Shuttle-CAT Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
pShuttle-CMV-lacZ Control Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
AD-293 Cell Line >1 x 10e6 Viable Cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
BJ5183-AD-1 electroporation competent cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Transformation Control	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
XL10-Gold Ultracompetent cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
XL10-Gold 2-Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
pUC 18 DNA Control Plasmid	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Lysis Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
0.5 M EDTA	Fire-fighters should wear appropriate protective

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Streptavidin Resin	equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Streptavidin Binding Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Streptavidin Elution Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Streptavidin Supernatant Supplement	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
MS-Grade Calmodulin Resin	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Calmodulin Binding Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Calmodulin Elution Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: Mercaptoethanol

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

Adenoviral pCTAP Shuttle Vector - A

Adenoviral pCTAP Shuttle Vector - B

pCTAP Shuttle vector-C

Section 6. Accidental release measures

Adenoviral pTAP Shuttle-CAT Vector	surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
pShuttle-CMV-lacZ Control Vector	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
AD-293 Cell Line >1 x 10e6 Viable Cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
BJ5183-AD-1 electroporation competent cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Transformation Control	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
XL10-Gold Ultracompetent cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
XL10-Gold 2-Mercaptoethanol	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not

Section 6. Accidental release measures

Lysis Buffer	touch or walk through spilled material. Put on appropriate personal protective equipment. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
0.5 M EDTA	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Streptavidin Resin	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Streptavidin Binding Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Streptavidin Elution Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Streptavidin Supernatant Supplement	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
MS-Grade Calmodulin Resin	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Calmodulin Binding Buffer	No action shall be taken involving any personal

Section 6. Accidental release measures

risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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Calmodulin Elution Buffer

For emergency responders : β -Mercaptoethanol

Adenoviral pCTAP Shuttle Vector - A

Adenoviral pCTAP Shuttle Vector - B

pCTAP Shuttle vector-C

Adenoviral pTAP Shuttle-CAT Vector

pShuttle-CMV-lacZ Control Vector

AD-293 Cell Line >1 x 10e6 Viable Cells

BJ5183-AD-1 electroporation competent cells

Transformation Control

XL10-Gold Ultracompetent cells

XL10-Gold 2-Mercaptoethanol

pUC 18 DNA Control Plasmid

Section 6. Accidental release measures

Lysis Buffer	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
0.5 M EDTA	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Streptavidin Resin	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Streptavidin Binding Buffer	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Streptavidin Elution Buffer	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Streptavidin Supernatant Supplement	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
MS-Grade Calmodulin Resin	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Calmodulin Binding Buffer	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Calmodulin Elution Buffer	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	
: β-Mercaptoethanol	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Adenoviral pCTAP Shuttle Vector - A	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Adenoviral pCTAP Shuttle Vector - B	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
pCTAP Shuttle vector-C	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Adenoviral pTAP Shuttle-CAT	Avoid dispersal of spilled material and runoff and

Section 6. Accidental release measures

Vector	contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
pShuttle-CMV-lacZ Control Vector	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
AD-293 Cell Line >1 x 10e6 Viable Cells	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
BJ5183-AD-1 electroporation competent cells	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Transformation Control	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
XL10-Gold Ultracompetent cells	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
XL10-Gold 2-Mercaptoethanol	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
pUC 18 DNA Control Plasmid	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Lysis Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
0.5 M EDTA	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Streptavidin Resin	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Streptavidin Binding Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

Streptavidin Elution Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Streptavidin Supernatant Supplement	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
MS-Grade Calmodulin Resin	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Calmodulin Binding Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Calmodulin Elution Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : β -Mercaptoethanol

	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Adenoviral pCTAP Shuttle Vector - A	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Adenoviral pCTAP Shuttle Vector - B	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
pCTAP Shuttle vector-C	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Adenoviral pTAP Shuttle-CAT Vector	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

pShuttle-CMV-lacZ Control Vector	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
AD-293 Cell Line >1 x 10e6 Viable Cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
BJ5183-AD-1 electroporation competent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Transformation Control	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
XL10-Gold Ultracompetent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
XL10-Gold 2-Mercaptoethanol	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
pUC 18 DNA Control Plasmid	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Lysis Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
0.5 M EDTA	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Streptavidin Resin	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an

Section 6. Accidental release measures

Streptavidin Binding Buffer	appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Streptavidin Elution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Streptavidin Supernatant Supplement	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
MS-Grade Calmodulin Resin	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Calmodulin Binding Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Calmodulin Elution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures : -Mercaptoethanol

Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools.

Section 7. Handling and storage

	Empty containers retain product residue and can be hazardous. Do not reuse container.
Adenoviral pCTAP Shuttle Vector - A	Put on appropriate personal protective equipment (see Section 8).
Adenoviral pCTAP Shuttle Vector - B	Put on appropriate personal protective equipment (see Section 8).
pCTAP Shuttle vector-C	Put on appropriate personal protective equipment (see Section 8).
Adenoviral pTAP Shuttle-CAT Vector	Put on appropriate personal protective equipment (see Section 8).
pShuttle-CMV-lacZ Control Vector	Put on appropriate personal protective equipment (see Section 8).
AD-293 Cell Line >1 x 10e6 Viable Cells	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
BJ5183-AD-1 electroporation competent cells	Put on appropriate personal protective equipment (see Section 8).
Transformation Control	Put on appropriate personal protective equipment (see Section 8).
XL10-Gold Ultracompetent cells	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
XL10-Gold 2-Mercaptoethanol	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8).
Lysis Buffer	Put on appropriate personal protective equipment (see Section 8).
0.5 M EDTA	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Streptavidin Resin	Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do

Section 7. Handling and storage

	not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
Streptavidin Binding Buffer	Put on appropriate personal protective equipment (see Section 8).
Streptavidin Elution Buffer	Put on appropriate personal protective equipment (see Section 8).
Streptavidin Supernatant Supplement	Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
MS-Grade Calmodulin Resin	Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
Calmodulin Binding Buffer	Put on appropriate personal protective equipment (see Section 8).
Calmodulin Elution Buffer	Put on appropriate personal protective equipment (see Section 8).

Section 7. Handling and storage

Advice on general occupational hygiene

: -Mercaptoethanol

Adenoviral pCTAP Shuttle Vector - A	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Adenoviral pCTAP Shuttle Vector - B	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
pCTAP Shuttle vector-C	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Adenoviral pTAP Shuttle-CAT Vector	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
pShuttle-CMV-lacZ Control Vector	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
AD-293 Cell Line >1 x 10e6 Viable Cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
BJ5183-AD-1 electroporation competent cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Transformation Control	Eating, drinking and smoking should be prohibited

Section 7. Handling and storage

XL10-Gold Ultracompetent cells	<p>in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
XL10-Gold 2-Mercaptoethanol	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
pUC 18 DNA Control Plasmid	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
Lysis Buffer	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
0.5 M EDTA	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
Streptavidin Resin	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
Streptavidin Binding Buffer	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
Streptavidin Elution Buffer	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face</p>

Section 7. Handling and storage

Streptavidin Supernatant Supplement

before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

MS-Grade Calmodulin Resin

Calmodulin Binding Buffer

Calmodulin Elution Buffer

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.2 Conditions for safe storage, including any incompatibilities

: -Mercaptoethanol

Adenoviral pCTAP Shuttle Vector - A

Section 7. Handling and storage

Adenoviral pCTAP Shuttle Vector - B	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
pCTAP Shuttle vector-C	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Adenoviral pTAP Shuttle-CAT Vector	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
pShuttle-CMV-lacZ Control Vector	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
AD-293 Cell Line >1 x 10e6 Viable Cells	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
BJ5183-AD-1 electroporation competent cells	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food

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Transformation Control	<p>and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
XL10-Gold Ultracompetent cells	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
XL10-Gold 2-Mercaptoethanol	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
pUC 18 DNA Control Plasmid	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Lysis Buffer	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright</p>

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0.5 M EDTA

to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Streptavidin Resin

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Streptavidin Binding Buffer

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Streptavidin Elution Buffer

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Streptavidin Supernatant Supplement

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store

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MS-Grade Calmodulin Resin	in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Calmodulin Binding Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Calmodulin Elution Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

: β -Mercaptoethanol	Industrial applications, Professional applications.
Adenoviral pCTAP Shuttle Vector - A	Industrial applications, Professional applications.
Adenoviral pCTAP Shuttle Vector - B	Industrial applications, Professional applications.
pCTAP Shuttle vector-C	Industrial applications, Professional applications.
Adenoviral pTAP Shuttle-CAT Vector	Industrial applications, Professional applications.
pShuttle-CMV-lacZ Control Vector	Industrial applications, Professional applications.
AD-293 Cell Line >1 x 10e6 Viable Cells	Industrial applications, Professional applications.
BJ5183-AD-1 electroporation competent cells	Industrial applications, Professional applications.
Transformation Control	Industrial applications, Professional applications.
XL10-Gold Ultracompetent cells	Industrial applications, Professional applications.
XL10-Gold 2-Mercaptoethanol	Industrial applications, Professional applications.

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	pUC 18 DNA Control Plasmid	Industrial applications, Professional applications.
	Lysis Buffer	Industrial applications, Professional applications.
	0.5 M EDTA	Industrial applications, Professional applications.
	Streptavidin Resin	Industrial applications, Professional applications.
	Streptavidin Binding Buffer	Industrial applications, Professional applications.
	Streptavidin Elution Buffer	Industrial applications, Professional applications.
	Streptavidin Supernatant Supplement	Industrial applications, Professional applications.
	MS-Grade Calmodulin Resin	Industrial applications, Professional applications.
	Calmodulin Binding Buffer	Industrial applications, Professional applications.
	Calmodulin Elution Buffer	Industrial applications, Professional applications.
Industrial sector specific solutions	: β -Mercaptoethanol	Not applicable.
	Adenoviral pCTAP Shuttle Vector - A	Not applicable.
	Adenoviral pCTAP Shuttle Vector - B	Not applicable.
	pCTAP Shuttle vector-C	Not applicable.
	Adenoviral pTAP Shuttle-CAT Vector	Not applicable.
	pShuttle-CMV-lacZ Control Vector	Not applicable.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.
	BJ5183-AD-1 electroporation competent cells	Not applicable.
	Transformation Control	Not applicable.
	XL10-Gold Ultracompetent cells	Not applicable.
	XL10-Gold 2-Mercaptoethanol	Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
	Lysis Buffer	Not applicable.
	0.5 M EDTA	Not applicable.
	Streptavidin Resin	Not applicable.
	Streptavidin Binding Buffer	Not applicable.
	Streptavidin Elution Buffer	Not applicable.
	Streptavidin Supernatant Supplement	Not applicable.
	MS-Grade Calmodulin Resin	Not applicable.
	Calmodulin Binding Buffer	Not applicable.
Calmodulin Elution Buffer	Not applicable.	

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
β -Mercaptoethanol 2-Mercaptoethanol	AIHA WEEL (United States, 10/2011). Absorbed through skin. TWA: 0.2 ppm 8 hours.
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	AIHA WEEL (United States, 10/2011). TWA: 250 ppm 8 hours.
BJ5183-AD-1 electroporation competent cells Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction

Section 8. Exposure controls/personal protection

XL10-Gold Ultracompetent cells

Glycerol

Dimethyl sulfoxide

Potassium chloride

XL10-Gold 2-Mercaptoethanol

Sodium chloride

2-Mercaptoethanol

0.5 M EDTA

Edetic acid

Streptavidin Resin

Ethanol

Streptavidin Supernatant Supplement

calcium chloride

Imidazole

MS-Grade Calmodulin Resin

Ethanol

TWA: 10 mg/m³ 8 hours. Form: Total dust
OSHA PEL (United States, 6/2016).

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 15 mg/m³ 8 hours. Form: Total dust

OSHA PEL 1989 (United States, 3/1989).

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 10 mg/m³ 8 hours. Form: Total dust
OSHA PEL (United States, 6/2016).

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 15 mg/m³ 8 hours. Form: Total dust

AIHA WEEL (United States, 10/2011).

TWA: 250 ppm 8 hours.

None.

None.

AIHA WEEL (United States, 10/2011).

Absorbed through skin.

TWA: 0.2 ppm 8 hours.

None.

ACGIH TLV (United States, 3/2017).

STEL: 1000 ppm 15 minutes.

OSHA PEL 1989 (United States, 3/1989).

TWA: 1000 ppm 8 hours.

TWA: 1900 mg/m³ 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 1000 ppm 10 hours.

TWA: 1900 mg/m³ 10 hours.

OSHA PEL (United States, 6/2016).

TWA: 1000 ppm 8 hours.

TWA: 1900 mg/m³ 8 hours.

None.

None.

ACGIH TLV (United States, 3/2017).

STEL: 1000 ppm 15 minutes.

OSHA PEL 1989 (United States, 3/1989).

TWA: 1000 ppm 8 hours.

TWA: 1900 mg/m³ 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 1000 ppm 10 hours.

TWA: 1900 mg/m³ 10 hours.

OSHA PEL (United States, 6/2016).

TWA: 1000 ppm 8 hours.

TWA: 1900 mg/m³ 8 hours.

Section 8. Exposure controls/personal protection

Sodium chloride

None.

8.2 Exposure controls

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Section 9. Physical and chemical properties

Physical state	:	β-Mercaptoethanol	Liquid.	
		Adenoviral pCTAP Shuttle Vector - A	Liquid.	
		Adenoviral pCTAP Shuttle Vector - B	Liquid.	
		pCTAP Shuttle vector-C	Liquid.	
		Adenoviral pTAP Shuttle-CAT Vector	Liquid.	
		pShuttle-CMV-lacZ Control Vector	Liquid.	
		AD-293 Cell Line >1 x 10e6 Viable Cells	Liquid.	
		BJ5183-AD-1 electroporation competent cells	Liquid.	
		Transformation Control	Liquid.	
		XL10-Gold Ultracompetent cells	Liquid.	
		XL10-Gold 2-Mercaptoethanol	Liquid.	
		pUC 18 DNA Control Plasmid	Liquid.	
		Lysis Buffer	Liquid.	
		0.5 M EDTA	Liquid.	
		Streptavidin Resin	Liquid.	
		Streptavidin Binding Buffer	Liquid.	
		Streptavidin Elution Buffer	Liquid.	
		Streptavidin Supernatant Supplement	Liquid.	
		MS-Grade Calmodulin Resin	Liquid.	
		Calmodulin Binding Buffer	Liquid.	
		Calmodulin Elution Buffer	Liquid.	
	Color	:	β-Mercaptoethanol	Colorless.
			Adenoviral pCTAP Shuttle Vector - A	Not available.
			Adenoviral pCTAP Shuttle Vector - B	Not available.
			pCTAP Shuttle vector-C	Not available.
			Adenoviral pTAP Shuttle-CAT Vector	Not available.
			pShuttle-CMV-lacZ Control Vector	Not available.
			AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
			BJ5183-AD-1 electroporation competent cells	Not available.
			Transformation Control	Not available.
			XL10-Gold Ultracompetent cells	Not available.
			XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.	
		Lysis Buffer	Not available.	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	Not available.	
		Streptavidin Elution Buffer	Not available.	
		Streptavidin Supernatant Supplement	Not available.	
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	Not available.	
		Calmodulin Elution Buffer	Not available.	

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Odor	:	β-Mercaptoethanol	Characteristic.	
		Adenoviral pCTAP Shuttle Vector - A	Not available.	
		Adenoviral pCTAP Shuttle Vector - B	Not available.	
		pCTAP Shuttle vector-C	Not available.	
		Adenoviral pTAP Shuttle-CAT Vector	Not available.	
		pShuttle-CMV-lacZ Control Vector	Not available.	
		AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.	
		BJ5183-AD-1 electroporation competent cells	Not available.	
		Transformation Control	Not available.	
		XL10-Gold Ultracompetent cells	Not available.	
		XL10-Gold 2-Mercaptoethanol	Not available.	
		pUC 18 DNA Control Plasmid	Not available.	
		Lysis Buffer	Not available.	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	Not available.	
		Streptavidin Elution Buffer	Not available.	
		Streptavidin Supernatant	Not available.	
		Supplement		
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	Not available.	
		Calmodulin Elution Buffer	Not available.	
	Odor threshold	:	β-Mercaptoethanol	Not available.
			Adenoviral pCTAP Shuttle Vector - A	Not available.
			Adenoviral pCTAP Shuttle Vector - B	Not available.
			pCTAP Shuttle vector-C	Not available.
			Adenoviral pTAP Shuttle-CAT Vector	Not available.
		pShuttle-CMV-lacZ Control Vector	Not available.	
		AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.	
		BJ5183-AD-1 electroporation competent cells	Not available.	
		Transformation Control	Not available.	
		XL10-Gold Ultracompetent cells	Not available.	
		XL10-Gold 2-Mercaptoethanol	Not available.	
		pUC 18 DNA Control Plasmid	Not available.	
		Lysis Buffer	Not available.	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	Not available.	
		Streptavidin Elution Buffer	Not available.	
		Streptavidin Supernatant	Not available.	
		Supplement		
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	Not available.	
		Calmodulin Elution Buffer	Not available.	

pH :

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β-Mercaptoethanol	Not available.
Adenoviral pCTAP Shuttle Vector - A	7.5
Adenoviral pCTAP Shuttle Vector - B	7.5
pCTAP Shuttle vector-C	7.5
Adenoviral pTAP Shuttle-CAT Vector	7.5
pShuttle-CMV-lacZ Control Vector	7.5
AD-293 Cell Line >1 x 10e6 Viable Cells	7.5
BJ5183-AD-1 electroporation competent cells	Not available.
Transformation Control	7.5
XL10-Gold Ultracompetent cells	6.4
XL10-Gold 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	7.5
Lysis Buffer	8
0.5 M EDTA	8
Streptavidin Resin	7.5
Streptavidin Binding Buffer	8
Streptavidin Elution Buffer	8
Streptavidin Supernatant	Not available.
Supplement	
MS-Grade Calmodulin Resin	7.5
Calmodulin Binding Buffer	8
Calmodulin Elution Buffer	8

Melting point

β-Mercaptoethanol	<-100°C (<-148°F)
Adenoviral pCTAP Shuttle Vector - A	0°C (32°F)
Adenoviral pCTAP Shuttle Vector - B	0°C (32°F)
pCTAP Shuttle vector-C	0°C (32°F)
Adenoviral pTAP Shuttle-CAT Vector	0°C (32°F)
pShuttle-CMV-lacZ Control Vector	0°C (32°F)
AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
BJ5183-AD-1 electroporation competent cells	Not available.
Transformation Control	0°C (32°F)
XL10-Gold Ultracompetent cells	Not available.
XL10-Gold 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	0°C (32°F)
Lysis Buffer	0°C (32°F)
0.5 M EDTA	Not available.
Streptavidin Resin	Not available.
Streptavidin Binding Buffer	0°C (32°F)
Streptavidin Elution Buffer	0°C (32°F)
Streptavidin Supernatant	0°C (32°F)
Supplement	
MS-Grade Calmodulin Resin	Not available.
Calmodulin Binding Buffer	0°C (32°F)
Calmodulin Elution Buffer	0°C (32°F)

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Boiling point	:	β-Mercaptoethanol	155.8°C (312.4°F)	
		Adenoviral pCTAP Shuttle Vector - A	100°C (212°F)	
		Adenoviral pCTAP Shuttle Vector - B	100°C (212°F)	
		pCTAP Shuttle vector-C	100°C (212°F)	
		Adenoviral pTAP Shuttle-CAT Vector	100°C (212°F)	
		pShuttle-CMV-lacZ Control Vector	100°C (212°F)	
		AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.	
		BJ5183-AD-1 electroporation competent cells	Not available.	
		Transformation Control	100°C (212°F)	
		XL10-Gold Ultracompetent cells	Not available.	
		XL10-Gold 2-Mercaptoethanol	Not available.	
		pUC 18 DNA Control Plasmid	100°C (212°F)	
		Lysis Buffer	100°C (212°F)	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	100°C (212°F)	
		Streptavidin Elution Buffer	100°C (212°F)	
		Streptavidin Supernatant	100°C (212°F)	
		Supplement		
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	100°C (212°F)	
		Calmodulin Elution Buffer	100°C (212°F)	
	Flash point	:	β-Mercaptoethanol	Closed cup: 74°C (165.2°F) Open cup: 74°C (165.2°F)
			Adenoviral pCTAP Shuttle Vector - A	Not available.
			Adenoviral pCTAP Shuttle Vector - B	Not available.
			pCTAP Shuttle vector-C	Not available.
			Adenoviral pTAP Shuttle-CAT Vector	Not available.
			pShuttle-CMV-lacZ Control Vector	Not available.
			AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
			BJ5183-AD-1 electroporation competent cells	Not available.
			Transformation Control	Not available.
			XL10-Gold Ultracompetent cells	Not available.
			XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.	
		Lysis Buffer	Not available.	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Closed cup: 37.8 to 61°C (100 to 141.8°F)	
		Streptavidin Binding Buffer	Not available.	
		Streptavidin Elution Buffer	Not available.	
		Streptavidin Supernatant	Not available.	
		Supplement		
		MS-Grade Calmodulin Resin	Closed cup: 37.8 to 61°C (100 to 141.8°F)	
		Calmodulin Binding Buffer	Not available.	
	Calmodulin Elution Buffer	Not available.		

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Evaporation rate	:	β-Mercaptoethanol	Not available.	
		Adenoviral pCTAP Shuttle Vector - A	Not available.	
		Adenoviral pCTAP Shuttle Vector - B	Not available.	
		pCTAP Shuttle vector-C	Not available.	
		Adenoviral pTAP Shuttle-CAT Vector	Not available.	
		pShuttle-CMV-lacZ Control Vector	Not available.	
		AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.	
		BJ5183-AD-1 electroporation competent cells	Not available.	
		Transformation Control	Not available.	
		XL10-Gold Ultracompetent cells	Not available.	
		XL10-Gold 2-Mercaptoethanol	Not available.	
		pUC 18 DNA Control Plasmid	Not available.	
		Lysis Buffer	Not available.	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	Not available.	
		Streptavidin Elution Buffer	Not available.	
		Streptavidin Supernatant Supplement	Not available.	
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	Not available.	
		Calmodulin Elution Buffer	Not available.	
	Flammability (solid, gas)	:	β-Mercaptoethanol	Not applicable.
			Adenoviral pCTAP Shuttle Vector - A	Not applicable.
			Adenoviral pCTAP Shuttle Vector - B	Not applicable.
			pCTAP Shuttle vector-C	Not applicable.
			Adenoviral pTAP Shuttle-CAT Vector	Not applicable.
			pShuttle-CMV-lacZ Control Vector	Not applicable.
		AD-293 Cell Line >1 x 10e6 Viable Cells	Not applicable.	
		BJ5183-AD-1 electroporation competent cells	Not applicable.	
		Transformation Control	Not applicable.	
		XL10-Gold Ultracompetent cells	Not applicable.	
		XL10-Gold 2-Mercaptoethanol	Not applicable.	
		pUC 18 DNA Control Plasmid	Not applicable.	
		Lysis Buffer	Not applicable.	
		0.5 M EDTA	Not applicable.	
		Streptavidin Resin	Not applicable.	
		Streptavidin Binding Buffer	Not applicable.	
		Streptavidin Elution Buffer	Not applicable.	
		Streptavidin Supernatant Supplement	Not applicable.	
		MS-Grade Calmodulin Resin	Not applicable.	
		Calmodulin Binding Buffer	Not applicable.	
		Calmodulin Elution Buffer	Not applicable.	

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Lower and upper explosive (flammable) limits	:	β -Mercaptoethanol	Lower: 2.3%	
			Upper: 18%	
		Adenoviral pCTAP Shuttle Vector - A	Not available.	
		Adenoviral pCTAP Shuttle Vector - B	Not available.	
		pCTAP Shuttle vector-C	Not available.	
		Adenoviral pTAP Shuttle-CAT Vector	Not available.	
		pShuttle-CMV-lacZ Control Vector	Not available.	
		AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.	
		BJ5183-AD-1 electroporation competent cells	Not available.	
		Transformation Control	Not available.	
		XL10-Gold Ultracompetent cells	Not available.	
		XL10-Gold 2-Mercaptoethanol	Not available.	
		pUC 18 DNA Control Plasmid	Not available.	
		Lysis Buffer	Not available.	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	Not available.	
		Streptavidin Elution Buffer	Not available.	
		Streptavidin Supernatant Supplement	Not available.	
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	Not available.	
		Calmodulin Elution Buffer	Not available.	
	Vapor pressure	:	β -Mercaptoethanol	0.13 kPa (0.98 mm Hg) [room temperature]
		Adenoviral pCTAP Shuttle Vector - A	Not available.	
		Adenoviral pCTAP Shuttle Vector - B	Not available.	
		pCTAP Shuttle vector-C	Not available.	
		Adenoviral pTAP Shuttle-CAT Vector	Not available.	
		pShuttle-CMV-lacZ Control Vector	Not available.	
		AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.	
		BJ5183-AD-1 electroporation competent cells	Not available.	
		Transformation Control	Not available.	
		XL10-Gold Ultracompetent cells	Not available.	
		XL10-Gold 2-Mercaptoethanol	Not available.	
		pUC 18 DNA Control Plasmid	Not available.	
		Lysis Buffer	Not available.	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	Not available.	
		Streptavidin Elution Buffer	Not available.	
		Streptavidin Supernatant Supplement	Not available.	
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	Not available.	
		Calmodulin Elution Buffer	Not available.	
Vapor density		:		

Section 9. Physical and chemical properties

β-Mercaptoethanol	2.7 [Air = 1]
Adenoviral pCTAP Shuttle Vector - A	Not available.
Adenoviral pCTAP Shuttle Vector - B	Not available.
pCTAP Shuttle vector-C	Not available.
Adenoviral pTAP Shuttle-CAT Vector	Not available.
pShuttle-CMV-lacZ Control Vector	Not available.
AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
BJ5183-AD-1 electroporation competent cells	Not available.
Transformation Control	Not available.
XL10-Gold Ultracompetent cells	Not available.
XL10-Gold 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	Not available.
Lysis Buffer	Not available.
0.5 M EDTA	Not available.
Streptavidin Resin	Not available.
Streptavidin Binding Buffer	Not available.
Streptavidin Elution Buffer	Not available.
Streptavidin Supernatant Supplement	Not available.
MS-Grade Calmodulin Resin	Not available.
Calmodulin Binding Buffer	Not available.
Calmodulin Elution Buffer	Not available.

Relative density :

β-Mercaptoethanol	1.1
Adenoviral pCTAP Shuttle Vector - A	Not available.
Adenoviral pCTAP Shuttle Vector - B	Not available.
pCTAP Shuttle vector-C	Not available.
Adenoviral pTAP Shuttle-CAT Vector	Not available.
pShuttle-CMV-lacZ Control Vector	Not available.
AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
BJ5183-AD-1 electroporation competent cells	Not available.
Transformation Control	Not available.
XL10-Gold Ultracompetent cells	Not available.
XL10-Gold 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	Not available.
Lysis Buffer	Not available.
0.5 M EDTA	Not available.
Streptavidin Resin	Not available.
Streptavidin Binding Buffer	Not available.
Streptavidin Elution Buffer	Not available.
Streptavidin Supernatant Supplement	Not available.
MS-Grade Calmodulin Resin	Not available.
Calmodulin Binding Buffer	Not available.
Calmodulin Elution Buffer	Not available.

Section 9. Physical and chemical properties

Solubility	: β -Mercaptoethanol	Easily soluble in the following materials: cold water and hot water.
	Adenoviral pCTAP Shuttle Vector - A	Easily soluble in the following materials: cold water and hot water.
	Adenoviral pCTAP Shuttle Vector - B	Easily soluble in the following materials: cold water and hot water.
	pCTAP Shuttle vector-C	Easily soluble in the following materials: cold water and hot water.
	Adenoviral pTAP Shuttle-CAT Vector	Easily soluble in the following materials: cold water and hot water.
	pShuttle-CMV-lacZ Control Vector	Easily soluble in the following materials: cold water and hot water.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Easily soluble in the following materials: cold water and hot water.
	BJ5183-AD-1 electroporation competent cells	Soluble in the following materials: cold water and hot water.
	Transformation Control	Easily soluble in the following materials: cold water and hot water.
	XL10-Gold Ultracompetent cells	Soluble in the following materials: cold water and hot water.
	XL10-Gold 2-Mercaptoethanol	Easily soluble in the following materials: cold water and hot water.
	pUC 18 DNA Control Plasmid	Easily soluble in the following materials: cold water and hot water.
	Lysis Buffer	Easily soluble in the following materials: cold water and hot water.
	0.5 M EDTA	Soluble in the following materials: cold water and hot water.
	Streptavidin Resin	Soluble in the following materials: cold water and hot water.
	Streptavidin Binding Buffer	Easily soluble in the following materials: cold water and hot water.
	Streptavidin Elution Buffer	Easily soluble in the following materials: cold water and hot water.
	Streptavidin Supernatant Supplement	Easily soluble in the following materials: cold water and hot water.
	MS-Grade Calmodulin Resin	Soluble in the following materials: cold water and hot water.
	Calmodulin Binding Buffer	Easily soluble in the following materials: cold water and hot water.
	Calmodulin Elution Buffer	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: β -Mercaptoethanol	-0.056
	Adenoviral pCTAP Shuttle Vector - A	Not available.
	Adenoviral pCTAP Shuttle Vector - B	Not available.
	pCTAP Shuttle vector-C	Not available.
	Adenoviral pTAP Shuttle-CAT Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	Transformation Control	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.

Section 9. Physical and chemical properties

	pUC 18 DNA Control Plasmid	Not available.
	Lysis Buffer	Not available.
	0.5 M EDTA	Not available.
	Streptavidin Resin	Not available.
	Streptavidin Binding Buffer	Not available.
	Streptavidin Elution Buffer	Not available.
	Streptavidin Supernatant Supplement	Not available.
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.
Auto-ignition temperature	: β -Mercaptoethanol	295°C (563°F)
	Adenoviral pCTAP Shuttle Vector - A	Not available.
	Adenoviral pCTAP Shuttle Vector - B	Not available.
	pCTAP Shuttle vector-C	Not available.
	Adenoviral pTAP Shuttle-CAT Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	Transformation Control	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Lysis Buffer	Not available.
	0.5 M EDTA	Not available.
	Streptavidin Resin	Not available.
	Streptavidin Binding Buffer	Not available.
	Streptavidin Elution Buffer	Not available.
	Streptavidin Supernatant Supplement	Not available.
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.
Decomposition temperature	: β -Mercaptoethanol	Not available.
	Adenoviral pCTAP Shuttle Vector - A	Not available.
	Adenoviral pCTAP Shuttle Vector - B	Not available.
	pCTAP Shuttle vector-C	Not available.
	Adenoviral pTAP Shuttle-CAT Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	Transformation Control	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Lysis Buffer	Not available.
	0.5 M EDTA	Not available.
	Streptavidin Resin	Not available.

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	Streptavidin Binding Buffer	Not available.
	Streptavidin Elution Buffer	Not available.
	Streptavidin Supernatant Supplement	Not available.
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.
Viscosity	: β -Mercaptoethanol	Dynamic (room temperature): 3.43 mPa·s (3.43 cP)
	Adenoviral pCTAP Shuttle Vector - A	Not available.
	Adenoviral pCTAP Shuttle Vector - B	Not available.
	pCTAP Shuttle vector-C	Not available.
	Adenoviral pTAP Shuttle-CAT Vector	Not available.
	pShuttle-CMV-lacZ Control Vector	Not available.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Not available.
	BJ5183-AD-1 electroporation competent cells	Not available.
	Transformation Control	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	Lysis Buffer	Not available.
	0.5 M EDTA	Not available.
	Streptavidin Resin	Not available.
	Streptavidin Binding Buffer	Not available.
	Streptavidin Elution Buffer	Not available.
	Streptavidin Supernatant Supplement	Not available.
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: β -Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
	Adenoviral pCTAP Shuttle Vector - A	No specific test data related to reactivity available for this product or its ingredients.
	Adenoviral pCTAP Shuttle Vector - B	No specific test data related to reactivity available for this product or its ingredients.
	pCTAP Shuttle vector-C	No specific test data related to reactivity available for this product or its ingredients.
	Adenoviral pTAP Shuttle-CAT Vector	No specific test data related to reactivity available for this product or its ingredients.
	pShuttle-CMV-lacZ Control Vector	No specific test data related to reactivity available for this product or its ingredients.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No specific test data related to reactivity available for this product or its ingredients.
	BJ5183-AD-1 electroporation competent cells	No specific test data related to reactivity available for this product or its ingredients.
	Transformation Control	No specific test data related to reactivity available for this product or its ingredients.
	XL10-Gold Ultracompetent cells	No specific test data related to reactivity available for this product or its ingredients.
	XL10-Gold 2-Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.

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pUC 18 DNA Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
Lysis Buffer	No specific test data related to reactivity available for this product or its ingredients.
0.5 M EDTA	No specific test data related to reactivity available for this product or its ingredients.
Streptavidin Resin	No specific test data related to reactivity available for this product or its ingredients.
Streptavidin Binding Buffer	No specific test data related to reactivity available for this product or its ingredients.
Streptavidin Elution Buffer	No specific test data related to reactivity available for this product or its ingredients.
Streptavidin Supernatant Supplement	No specific test data related to reactivity available for this product or its ingredients.
MS-Grade Calmodulin Resin	No specific test data related to reactivity available for this product or its ingredients.
Calmodulin Binding Buffer	No specific test data related to reactivity available for this product or its ingredients.
Calmodulin Elution Buffer	No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

: β -Mercaptoethanol	The product is stable.
Adenoviral pCTAP Shuttle Vector - A	The product is stable.
Adenoviral pCTAP Shuttle Vector - B	The product is stable.
pCTAP Shuttle vector-C	The product is stable.
Adenoviral pTAP Shuttle-CAT Vector	The product is stable.
pShuttle-CMV-lacZ Control Vector	The product is stable.
AD-293 Cell Line >1 x 10 ⁶ Viable Cells	The product is stable.
BJ5183-AD-1 electroporation competent cells	The product is stable.
Transformation Control	The product is stable.
XL10-Gold Ultracompetent cells	The product is stable.
XL10-Gold 2-Mercaptoethanol	The product is stable.
pUC 18 DNA Control Plasmid	The product is stable.
Lysis Buffer	The product is stable.
0.5 M EDTA	The product is stable.
Streptavidin Resin	The product is stable.
Streptavidin Binding Buffer	The product is stable.
Streptavidin Elution Buffer	The product is stable.
Streptavidin Supernatant Supplement	The product is stable.
MS-Grade Calmodulin Resin	The product is stable.
Calmodulin Binding Buffer	The product is stable.
Calmodulin Elution Buffer	The product is stable.

10.3 Possibility of hazardous reactions

: β -Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
Adenoviral pCTAP Shuttle Vector - A	Under normal conditions of storage and use, hazardous reactions will not occur.
Adenoviral pCTAP Shuttle Vector - B	Under normal conditions of storage and use, hazardous reactions will not occur.
pCTAP Shuttle vector-C	Under normal conditions of storage and use, hazardous reactions will not occur.
Adenoviral pTAP Shuttle-CAT	Under normal conditions of storage and use,

Section 10. Stability and reactivity

Vector	hazardous reactions will not occur.
pShuttle-CMV-lacZ Control Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
AD-293 Cell Line >1 x 10e6 Viable Cells	Under normal conditions of storage and use, hazardous reactions will not occur.
BJ5183-AD-1 electroporation competent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
Transformation Control	Under normal conditions of storage and use, hazardous reactions will not occur.
XL10-Gold Ultracompetent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
XL10-Gold 2-Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
Lysis Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
0.5 M EDTA	Under normal conditions of storage and use, hazardous reactions will not occur.
Streptavidin Resin	Under normal conditions of storage and use, hazardous reactions will not occur.
Streptavidin Binding Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Streptavidin Elution Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Streptavidin Supernatant Supplement	Under normal conditions of storage and use, hazardous reactions will not occur.
MS-Grade Calmodulin Resin	Under normal conditions of storage and use, hazardous reactions will not occur.
Calmodulin Binding Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Calmodulin Elution Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid	: β -Mercaptoethanol	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
	Adenoviral pCTAP Shuttle Vector - A	No specific data.
	Adenoviral pCTAP Shuttle Vector - B	No specific data.
	pCTAP Shuttle vector-C	No specific data.
	Adenoviral pTAP Shuttle-CAT Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	Transformation Control	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	Avoid all possible sources of ignition (spark or

Section 10. Stability and reactivity

Streptavidin Binding Buffer	flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Streptavidin Elution Buffer	No specific data.
Streptavidin Supernatant Supplement	No specific data.
MS-Grade Calmodulin Resin	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.

10.5 Incompatible materials :	β -Mercaptoethanol	Reactive or incompatible with the following materials: oxidizing materials
	Adenoviral pCTAP Shuttle Vector - A	May react or be incompatible with oxidizing materials.
	Adenoviral pCTAP Shuttle Vector - B	May react or be incompatible with oxidizing materials.
	pCTAP Shuttle vector-C	May react or be incompatible with oxidizing materials.
	Adenoviral pTAP Shuttle-CAT Vector	May react or be incompatible with oxidizing materials.
	pShuttle-CMV-lacZ Control Vector	May react or be incompatible with oxidizing materials.
	AD-293 Cell Line >1 x 10e6 Viable Cells	May react or be incompatible with oxidizing materials.
	BJ5183-AD-1 electroporation competent cells	May react or be incompatible with oxidizing materials.
	Transformation Control	May react or be incompatible with oxidizing materials.
	XL10-Gold Ultracompetent cells	May react or be incompatible with oxidizing materials.
	XL10-Gold 2-Mercaptoethanol	May react or be incompatible with oxidizing materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidizing materials.
	Lysis Buffer	May react or be incompatible with oxidizing materials.
	0.5 M EDTA	May react or be incompatible with oxidizing materials.
	Streptavidin Resin	Reactive or incompatible with the following materials: oxidizing materials
	Streptavidin Binding Buffer	May react or be incompatible with oxidizing materials.
	Streptavidin Elution Buffer	May react or be incompatible with oxidizing materials.
	Streptavidin Supernatant Supplement	May react or be incompatible with oxidizing materials.
	MS-Grade Calmodulin Resin	Reactive or incompatible with the following materials: oxidizing materials
	Calmodulin Binding Buffer	May react or be incompatible with oxidizing materials.
	Calmodulin Elution Buffer	May react or be incompatible with oxidizing

Section 10. Stability and reactivity

10.6 Hazardous decomposition products

		materials.
	: β -Mercaptoethanol	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Adenoviral pCTAP Shuttle Vector - A	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Adenoviral pCTAP Shuttle Vector - B	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pCTAP Shuttle vector-C	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Adenoviral pTAP Shuttle-CAT Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pShuttle-CMV-lacZ Control Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	AD-293 Cell Line >1 x 10e6 Viable Cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	BJ5183-AD-1 electroporation competent cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Transformation Control	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	XL10-Gold Ultracompetent cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	XL10-Gold 2-Mercaptoethanol	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Lysis Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	0.5 M EDTA	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Streptavidin Resin	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Streptavidin Binding Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Streptavidin Elution Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Streptavidin Supernatant Supplement	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	MS-Grade Calmodulin Resin	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 10. Stability and reactivity

Calmodulin Binding Buffer	produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Calmodulin Elution Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
β-Mercaptoethanol 2-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	LD50 Dermal LD50 Oral	Rat Rat	40000 mg/kg 14500 mg/kg	- -
BJ5183-AD-1 electroporation competent cells Glycerol	LD50 Oral	Rat	12600 mg/kg	-
XL10-Gold Ultracompetent cells Glycerol Dimethyl sulfoxide	LD50 Oral LD50 Dermal LD50 Oral	Rat Rat Rat	12600 mg/kg 40000 mg/kg 14500 mg/kg	- - -
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
XL10-Gold 2-Mercaptoethanol Sodium chloride 2-Mercaptoethanol	LD50 Oral LD50 Oral	Rat Rat	3000 mg/kg 244 mg/kg	- -
Streptavidin Resin Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m ³ 7 g/kg	4 hours -
Streptavidin Supernatant Supplement calcium chloride Imidazole	LD50 Oral LD50 Oral	Rat Rat	1 g/kg 220 mg/kg	- -
MS-Grade Calmodulin Resin Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m ³ 7 g/kg	4 hours -
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
β-Mercaptoethanol 2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-
BJ5183-AD-1 electroporation competent cells Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
XL10-Gold Ultracompetent cells Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
XL10-Gold 2-Mercaptoethanol Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
Streptavidin Resin Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400	-

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MS-Grade Calmodulin Resin Ethanol	Skin - Moderate irritant	Rabbit	-	milligrams 24 hours 20 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
Sodium chloride	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 milligrams 24 hours 500 milligrams	- -

Conclusion/Summary

Skin

: **240105-51**: Prolonged or repeated contact may dry skin and cause irritation.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Streptavidin Resin Ethanol	-	1	-
MS-Grade Calmodulin Resin Ethanol	-	1	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
β-Mercaptoethanol 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation
Streptavidin Resin Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
MS-Grade Calmodulin Resin Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Streptavidin Resin Ethanol	Category 2	Not determined	liver
MS-Grade Calmodulin Resin Ethanol	Category 2	Not determined	liver

Aspiration hazard

Not available.

Information on the likely routes of exposure

β-Mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation.
Adenoviral pCTAP Shuttle Vector - A	Not available.
Adenoviral pCTAP Shuttle Vector - B	Not available.
pCTAP Shuttle vector-C	Not available.
Adenoviral pTAP Shuttle-CAT Vector	Not available.
pShuttle-CMV-lacZ Control Vector	Not available.
AD-293 Cell Line >1 x 10e6 Viable Cells	Routes of entry anticipated: Oral, Dermal, Inhalation.
BJ5183-AD-1 electroporation competent cells	Not available.
Transformation Control	Not available.
XL10-Gold Ultracompetent cells	Routes of entry anticipated: Oral, Dermal, Inhalation.
XL10-Gold 2-Mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation.
pUC 18 DNA Control Plasmid	Not available.
Lysis Buffer	Not available.
0.5 M EDTA	Routes of entry anticipated: Oral, Dermal, Inhalation.
Streptavidin Resin	Routes of entry anticipated: Oral, Dermal,

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Streptavidin Binding Buffer	Inhalation.
Streptavidin Elution Buffer	Not available.
Streptavidin Supernatant Supplement	Not available.
MS-Grade Calmodulin Resin	Routes of entry anticipated: Oral, Dermal, Inhalation.
Calmodulin Binding Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Calmodulin Elution Buffer	Not available.
	Not available.

Potential acute health effects

Eye contact

: β -Mercaptoethanol	Causes serious eye damage.
Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
pCTAP Shuttle vector-C	No known significant effects or critical hazards.
Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
AD-293 Cell Line >1 x 10e6 Viable Cells	Causes eye irritation.
BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.
XL10-Gold Ultracompetent cells	Causes eye irritation.
XL10-Gold 2-Mercaptoethanol	Causes serious eye damage.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Lysis Buffer	No known significant effects or critical hazards.
0.5 M EDTA	Causes serious eye irritation.
Streptavidin Resin	Causes serious eye irritation.
Streptavidin Binding Buffer	No known significant effects or critical hazards.
Streptavidin Elution Buffer	No known significant effects or critical hazards.
Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
MS-Grade Calmodulin Resin	Causes serious eye irritation.
Calmodulin Binding Buffer	No known significant effects or critical hazards.
Calmodulin Elution Buffer	No known significant effects or critical hazards.

Inhalation

: β -Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
pCTAP Shuttle vector-C	No known significant effects or critical hazards.
Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
Transformation Control	No known significant effects or critical hazards.
XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Lysis Buffer	No known significant effects or critical hazards.
0.5 M EDTA	No known significant effects or critical hazards.
Streptavidin Resin	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

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	Streptavidin Binding Buffer	May cause respiratory irritation.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
	MS-Grade Calmodulin Resin	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Skin contact	: β -Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10 ⁶ Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	May cause an allergic skin reaction.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	No known significant effects or critical hazards.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
	MS-Grade Calmodulin Resin	No known significant effects or critical hazards.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Ingestion	: β -Mercaptoethanol	Toxic if swallowed.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10 ⁶ Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	Can cause central nervous system (CNS) depression.

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Streptavidin Binding Buffer	No known significant effects or critical hazards.
Streptavidin Elution Buffer	No known significant effects or critical hazards.
Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
MS-Grade Calmodulin Resin	Can cause central nervous system (CNS) depression.
Calmodulin Binding Buffer	No known significant effects or critical hazards.
Calmodulin Elution Buffer	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

: β -Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
Adenoviral pCTAP Shuttle Vector - A	No specific data.
Adenoviral pCTAP Shuttle Vector - B	No specific data.
pCTAP Shuttle vector-C	No specific data.
Adenoviral pTAP Shuttle-CAT Vector	No specific data.
pShuttle-CMV-lacZ Control Vector	No specific data.
AD-293 Cell Line >1 x 10 ⁶ Viable Cells	Adverse symptoms may include the following: irritation watering redness
BJ5183-AD-1 electroporation competent cells	No specific data.
Transformation Control	No specific data.
XL10-Gold Ultracompetent cells	Adverse symptoms may include the following: irritation watering redness
XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
pUC 18 DNA Control Plasmid	No specific data.
Lysis Buffer	No specific data.
0.5 M EDTA	Adverse symptoms may include the following: pain or irritation watering redness
Streptavidin Resin	Adverse symptoms may include the following: pain or irritation watering redness
Streptavidin Binding Buffer	No specific data.
Streptavidin Elution Buffer	No specific data.
Streptavidin Supernatant Supplement	No specific data.
MS-Grade Calmodulin Resin	Adverse symptoms may include the following: pain or irritation watering redness
Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.

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Inhalation

: B -Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
Adenoviral pCTAP Shuttle Vector - A	No specific data.
Adenoviral pCTAP Shuttle Vector - B	No specific data.
pCTAP Shuttle vector-C	No specific data.
Adenoviral pTAP Shuttle-CAT Vector	No specific data.
pShuttle-CMV-lacZ Control Vector	No specific data.
AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
BJ5183-AD-1 electroporation competent cells	No specific data.
Transformation Control	No specific data.
XL10-Gold Ultracompetent cells	No specific data.
XL10-Gold 2-Mercaptoethanol	No specific data.
pUC 18 DNA Control Plasmid	No specific data.
Lysis Buffer	No specific data.
0.5 M EDTA	No specific data.
Streptavidin Resin	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Streptavidin Binding Buffer	No specific data.
Streptavidin Elution Buffer	No specific data.
Streptavidin Supernatant Supplement	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
MS-Grade Calmodulin Resin	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.

Skin contact

: B -Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Adenoviral pCTAP Shuttle Vector - A	No specific data.
Adenoviral pCTAP Shuttle Vector - B	No specific data.
pCTAP Shuttle vector-C	No specific data.
Adenoviral pTAP Shuttle-CAT Vector	No specific data.
pShuttle-CMV-lacZ Control Vector	No specific data.
AD-293 Cell Line >1 x 10e6 Viable	No specific data.

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	Cells	
	BJ5183-AD-1 electroporation competent cells	No specific data.
	Transformation Control	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	pUC 18 DNA Control Plasmid	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	No specific data.
	Streptavidin Binding Buffer	No specific data.
	Streptavidin Elution Buffer	No specific data.
	Streptavidin Supernatant Supplement	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	MS-Grade Calmodulin Resin	No specific data.
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
Ingestion	:  -Mercaptoethanol	Adverse symptoms may include the following: stomach pains
	Adenoviral pCTAP Shuttle Vector - A	No specific data.
	Adenoviral pCTAP Shuttle Vector - B	No specific data.
	pCTAP Shuttle vector-C	No specific data.
	Adenoviral pTAP Shuttle-CAT Vector	No specific data.
	pShuttle-CMV-lacZ Control Vector	No specific data.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No specific data.
	BJ5183-AD-1 electroporation competent cells	No specific data.
	Transformation Control	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: stomach pains
	pUC 18 DNA Control Plasmid	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	No specific data.
	Streptavidin Binding Buffer	No specific data.
	Streptavidin Elution Buffer	No specific data.
	Streptavidin Supernatant Supplement	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	MS-Grade Calmodulin Resin	No specific data.
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

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Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: β -Mercaptoethanol	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	May cause damage to organs through prolonged or repeated exposure.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
	MS-Grade Calmodulin Resin	May cause damage to organs through prolonged or repeated exposure.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Carcinogenicity	: β -Mercaptoethanol	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.

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	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	No known significant effects or critical hazards.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
	MS-Grade Calmodulin Resin	No known significant effects or critical hazards.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Mutagenicity	: β -Mercaptoethanol	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10 ⁶ Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
0.5 M EDTA	No known significant effects or critical hazards.	
Streptavidin Resin	No known significant effects or critical hazards.	
Streptavidin Binding Buffer	No known significant effects or critical hazards.	
Streptavidin Elution Buffer	No known significant effects or critical hazards.	
Streptavidin Supernatant Supplement	No known significant effects or critical hazards.	
	MS-Grade Calmodulin Resin	No known significant effects or critical hazards.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Teratogenicity	: <input checked="" type="checkbox"/> β -Mercaptoethanol	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10 ⁶ Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
0.5 M EDTA	No known significant effects or critical hazards.	
Streptavidin Resin	No known significant effects or critical hazards.	
Streptavidin Binding Buffer	No known significant effects or critical hazards.	

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	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	May damage the unborn child.
	MS-Grade Calmodulin Resin	No known significant effects or critical hazards.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Developmental effects	: β -Mercaptoethanol	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	No known significant effects or critical hazards.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
	MS-Grade Calmodulin Resin	No known significant effects or critical hazards.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
Fertility effects	: β -Mercaptoethanol	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - A	No known significant effects or critical hazards.
	Adenoviral pCTAP Shuttle Vector - B	No known significant effects or critical hazards.
	pCTAP Shuttle vector-C	No known significant effects or critical hazards.
	Adenoviral pTAP Shuttle-CAT Vector	No known significant effects or critical hazards.
	pShuttle-CMV-lacZ Control Vector	No known significant effects or critical hazards.
	AD-293 Cell Line >1 x 10e6 Viable Cells	No known significant effects or critical hazards.
	BJ5183-AD-1 electroporation competent cells	No known significant effects or critical hazards.
	Transformation Control	No known significant effects or critical hazards.
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	0.5 M EDTA	No known significant effects or critical hazards.
	Streptavidin Resin	No known significant effects or critical hazards.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	No known significant effects or critical hazards.
	MS-Grade Calmodulin Resin	No known significant effects or critical hazards.

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Calmodulin Binding Buffer
Calmodulin Elution Buffer

No known significant effects or critical hazards.
No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
<input checked="" type="checkbox"/> XL10-Gold Ultracompetent cells Oral	136842.1 mg/kg
XL10-Gold 2-Mercaptoethanol Oral Dermal Inhalation (vapors)	4615.5 mg/kg 4545.5 mg/kg 40.5 mg/l
Streptavidin Supernatant Supplement Oral	90918.2 mg/kg
MS-Grade Calmodulin Resin Oral	103448.4 mg/kg

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12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 ul/L Marine water	Algae - Ulva lactuca	72 hours
BJ5183-AD-1 electroporation competent cells Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
XL10-Gold Ultracompetent cells Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 ul/L Marine water	Algae - Ulva lactuca	72 hours
Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 141460 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 12.92 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 880 mg/l Fresh water	Fish - Pimephales promelas	96 hours
XL10-Gold 2-Mercaptoethanol			

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Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
0.5 M EDTA			
Edetic acid	Acute EC50 113000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 41000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
Streptavidin Resin			
Ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.375 µl/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
Streptavidin Supernatant Supplement			
calcium chloride	Acute EC50 3130000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 464000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 270 mg/l Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 2110 mg/l Fresh water	Fish - Pimephales promelas	96 hours
MS-Grade Calmodulin Resin			
Ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.375 µl/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours

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	Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	21 days 8 weeks
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12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
BJ5183-AD-1 electroporation competent cells Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
XL10-Gold Ultracompetent cells Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
XL10-Gold Ultracompetent cells Potassium chloride	-	-	Readily
0.5 M EDTA Edetic acid	-	-	Not readily
Streptavidin Resin Ethanol	-	-	Readily
Streptavidin Supernatant Supplement calcium chloride	-	-	Readily
MS-Grade Calmodulin Resin Ethanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
β-Mercaptoethanol 2-Mercaptoethanol	-0.056	-	low
AD-293 Cell Line >1 x 10⁶ Viable Cells Dimethyl sulfoxide	-1.35	3.16	low
BJ5183-AD-1 electroporation competent cells Glycerol	-1.76	-	low
XL10-Gold Ultracompetent cells			

Section 12. Ecological information

Glycerol	-1.76	-	low
Dimethyl sulfoxide	-1.35	3.16	low
Potassium chloride	-0.46	-	low
XL10-Gold			
2-Mercaptoethanol			
2-Mercaptoethanol	-0.056	-	low
0.5 M EDTA			
Edetic acid	-3.86	1.8	low
Streptavidin Resin			
Ethanol	-0.35	0.5	low
Streptavidin Supernatant Supplement			
calcium chloride	<3	-	low
Imidazole	-0.02	-	low
MS-Grade Calmodulin Resin			
Ethanol	-0.35	0.5	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3316	UN3316	UN3316	UN3316	UN3316
UN proper shipping name	Chemical kits	CHEMICAL KIT	EQUIPO QUIMICO	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9  	9 	9  	9 
Packing group	II	II	II	II	II
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

Remarks: Excepted Quantity

DOT Classification

: **Limited quantity** Yes.
Packaging instruction Exceptions: 161. Non-bulk: 161. Bulk: None.
Quantity limitation Passenger aircraft/rail: 10 kg. Cargo aircraft: 10 kg.
Special provisions 15

TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
The marine pollutant mark is not required when transported by road or rail.

Mexico Classification

: **Special provisions** 251, 340

IMDG

: The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-A, _S-P_
Special provisions 251, 340

IATA

: The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960. Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 1 kg. Packaging instructions: Y960.
Special provisions A44, A163

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : TSCA 4(a) proposed test rules: Glycine
 TSCA 8(a) PAIR: Polyoxyethylene octyl phenyl ether
 TSCA 8(a) CDR Exempt/Partial exemption: Not determined
 Clean Water Act (CWA) 311: Edetic acid; Disodium hydrogenorthophosphate; Iron trinitrate

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification :	⚠-Mercaptoethanol Adenoviral pCTAP Shuttle Vector - A Adenoviral pCTAP Shuttle Vector - B pCTAP Shuttle vector-C Adenoviral pTAP Shuttle-CAT Vector pShuttle-CMV-lacZ Control Vector AD-293 Cell Line >1 x 10e6 Viable Cells BJ5183-AD-1 electroporation competent cells Transformation Control XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid Lysis Buffer 0.5 M EDTA Streptavidin Resin	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. EYE IRRITATION - Category 2B Not applicable. Not applicable. EYE IRRITATION - Category 2B SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 Not applicable. Not applicable. EYE IRRITATION - Category 2A FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)
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Section 15. Regulatory information

Streptavidin Binding Buffer	(Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Streptavidin Elution Buffer	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2
Streptavidin Supernatant Supplement	Not applicable.
MS-Grade Calmodulin Resin	Not applicable. TOXIC TO REPRODUCTION (Unborn child) - Category 1B FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2
Calmodulin Binding Buffer	Not applicable.
Calmodulin Elution Buffer	Not applicable.

Composition/information on ingredients

Name	%	Classification
β-Mercaptoethanol 2-Mercaptoethanol	100	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
AD-293 Cell Line >1 x 10e6 Viable Cells Dimethyl sulfoxide	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2A
BJ5183-AD-1 electroporation competent cells Glycerol	<10	EYE IRRITATION - Category 2A
XL10-Gold Ultracompetent cells Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Dimethyl sulfoxide	≤10	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2A
Sucrose	≤10	COMBUSTIBLE DUSTS
Potassium chloride	≤3	EYE IRRITATION - Category 2A
XL10-Gold 2-Mercaptoethanol Sodium chloride	≥10 - ≤25	EYE IRRITATION - Category 2A
2-Mercaptoethanol	≤5	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
0.5 M EDTA Edetic acid	≥10 - ≤25	EYE IRRITATION - Category 2A

Section 15. Regulatory information

Streptavidin Resin Ethanol	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2 HNOC - Defatting irritant
Streptavidin Supernatant Supplement calcium chloride	≤3	ACUTE TOXICITY (oral) - Category 4 EYE IRRITATION - Category 2A
Imidazole	<1	ACUTE TOXICITY (oral) - Category 3 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 TOXIC TO REPRODUCTION (Unborn child) - Category 1B
MS-Grade Calmodulin Resin Ethanol	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2 HNOC - Defatting irritant
Sodium chloride	≤3	EYE IRRITATION - Category 2A

State regulations

Massachusetts

: The following components are listed: 2-MERCAPTOETHANOL; ETHYL ALCOHOL; DENATURED ALCOHOL

New York

: None of the components are listed.

New Jersey

: The following components are listed: THIOGLYCOL; 2-MERCAPTOETHANOL; ETHYL ALCOHOL; ALCOHOL

Pennsylvania

: The following components are listed: ETHANOL, 2-MERCAPTO-; DENATURED ALCOHOL; ETHANOL

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia

: Not determined.

Canada

: Not determined.

China

: Not determined.

Section 15. Regulatory information

Europe	: All components are listed or exempted.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

Section 16. Other information

History

Date of issue	: 01/23/2018
Date of previous issue	: 05/31/2016.
Version	: 7

Indicates information that has changed from previously issued version.

Notice to reader

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