

# SAFETY DATA SHEET



## InterPlay Mammalian TAP System, Part Number 240103

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

<b>Product name</b>	: InterPlay Mammalian TAP System, Part Number 240103	
<b>Part No. (Kit)</b>	: 240103	
<b>Part No.</b>	: β-Mercaptoethanol	240107-53
	pNTAP-A Expression Vector	240101-51
	pNTAP-B Expression Vector	240101-52
	pNTAP-C Expression Vector	240101-53
	pNTAP-Mef2a Expression Control Vector	240101-55
	pCMV-Tag2-Mef2c Expression Control Vector	240101-54
	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

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

##### Identified uses

Analytical reagent.		
β-Mercaptoethanol	0.75 ml (69 µl	14.4 M)
pNTAP-A Expression Vector	0.02 ml	
pNTAP-B Expression Vector	0.02 ml	
pNTAP-C Expression Vector	0.02 ml (20 µg	1 µg/µl)
pNTAP-Mef2a Expression Control Vector	0.03 ml (30 µg	1 µg/µl)
pCMV-Tag2-Mef2c Expression Control Vector	0.03 ml (30 µg	1 µg/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

**Date of issue/Date of revision** : 23/01/2018

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

Agilent Technologies Manufacturing GmbH & Co. KG  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany  
0800 603 1000

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(44)-870-8200418

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

<b>Product definition</b>	: $\beta$ -Mercaptoethanol	Mono-constituent substance
	pNTAP-A Expression Vector	Mixture
	pNTAP-B Expression Vector	Mixture
	pNTAP-C Expression Vector	Mixture
	pNTAP-Mef2a Expression Control Vector	Mixture
	pCMV-Tag2-Mef2c Expression Control Vector	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

### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

#### **$\beta$ -Mercaptoethanol**

H301	ACUTE TOXICITY (oral) - Category 3
H310	ACUTE TOXICITY (dermal) - Category 2
H330	ACUTE TOXICITY (inhalation) - Category 2
H315	SKIN CORROSION/IRRITATION - Category 2
H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
H317	SKIN SENSITISATION - Category 1
H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
H411	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

#### **0.5 M EDTA**

H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
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**Date of issue/Date of revision** : 23/01/2018

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## SECTION 2: Hazards identification

### Streptavidin Resin

H226 FLAMMABLE LIQUIDS - Category 3

### Streptavidin Supernatant Supplement

H360D REPRODUCTIVE TOXICITY (Unborn child) - Category 1B

### MS-Grade Calmodulin Resin

H226 FLAMMABLE LIQUIDS - Category 3

**Ingredients of unknown toxicity** :

<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Streptavidin Supernatant Supplement</li> <li><input type="checkbox"/> MS-Grade Calmodulin Resin</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%</li> <li>Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%</li> <li>Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%</li> </ul>
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See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

## 2.2 Label elements

### Hazard pictograms

:  β-Mercaptoethanol



0.5 M EDTA



Streptavidin Resin



Streptavidin Supernatant Supplement



MS-Grade Calmodulin Resin



### Signal word

<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> β-Mercaptoethanol</li> <li>pNTAP-A Expression Vector</li> <li>pNTAP-B Expression Vector</li> <li>pNTAP-C Expression Vector</li> <li>pNTAP-Mef2a Expression Control Vector</li> <li>pCMV-Tag2-Mef2c Expression Control Vector</li> <li>Lysis Buffer</li> </ul>	<ul style="list-style-type: none"> <li>Danger</li> <li>No signal word.</li> </ul>
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## SECTION 2: Hazards identification

	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.
<b>Hazard statements</b>	: <input checked="" type="checkbox"/> Mercaptoethanol	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. H411 - Toxic to aquatic life with long lasting effects.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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 vapour.
	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	Streptavidin Elution Buffer	No known significant effects or critical hazards.
	Streptavidin Supernatant Supplement	H360D - May damage the unborn child.
	MS-Grade Calmodulin Resin	H226 - Flammable liquid and vapour.
	Calmodulin Binding Buffer	No known significant effects or critical hazards.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
<b>Precautionary statements</b>		
<b>Prevention</b>	: <input checked="" type="checkbox"/> Mercaptoethanol	P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P273 - Avoid release to the environment. P262 - Do not get in eyes, on skin, or on clothing. P260 - Do not breathe vapour.
	pNTAP-A Expression Vector	Not applicable.
	pNTAP-B Expression Vector	Not applicable.
	pNTAP-C Expression Vector	Not applicable.
	pNTAP-Mef2a Expression Control Vector	Not applicable.

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pCMV-Tag2-Mef2c Expression Control Vector	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 protective clothing. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Streptavidin Binding Buffer	Not applicable.
Streptavidin Elution Buffer	Not applicable.
Streptavidin Supernatant Supplement	P201 - Obtain special instructions before use.
	P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection.
MS-Grade Calmodulin Resin	P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Calmodulin Binding Buffer	Not applicable.
Calmodulin Elution Buffer	Not applicable.
<b>Response</b> : <input checked="" type="checkbox"/> Mercaptoethanol	P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or physician. P302 + P310 - IF ON SKIN: Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.
pNTAP-A Expression Vector	Not applicable.
pNTAP-B Expression Vector	Not applicable.
pNTAP-C Expression Vector	Not applicable.
pNTAP-Mef2a Expression Control Vector	Not applicable.
pCMV-Tag2-Mef2c Expression Control Vector	Not applicable.
Lysis Buffer	Not applicable.
0.5 M EDTA	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Streptavidin Resin	P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
Streptavidin Binding Buffer	Not applicable.
Streptavidin Elution Buffer	Not applicable.
Streptavidin Supernatant Supplement	P308 + P313 - IF exposed or concerned: Get medical attention.
MS-Grade Calmodulin Resin	P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
Calmodulin Binding	Not applicable.

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## SECTION 2: Hazards identification

	Buffer	
	Calmodulin Elution Buffer	Not applicable.
<b>Storage</b>	: <input checked="" type="checkbox"/> Mercaptoethanol	P405 - Store locked up.
	pNTAP-A Expression Vector	Not applicable.
	pNTAP-B Expression Vector	Not applicable.
	pNTAP-C Expression Vector	Not applicable.
	pNTAP-Mef2a Expression Control Vector	Not applicable.
	pCMV-Tag2-Mef2c Expression Control Vector	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	P405 - Store locked up.
	MS-Grade Calmodulin Resin	Not applicable.
	Calmodulin Binding Buffer	Not applicable.
	Calmodulin Elution Buffer	Not applicable.
<b>Disposal</b>	: <input type="checkbox"/> Mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	pNTAP-A Expression Vector	Not applicable.
	pNTAP-B Expression Vector	Not applicable.
	pNTAP-C Expression Vector	Not applicable.
	pNTAP-Mef2a Expression Control Vector	Not applicable.
	pCMV-Tag2-Mef2c Expression Control Vector	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.



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## SECTION 2: Hazards identification

Supplement	
MS-Grade Calmodulin Resin	Not applicable.
Calmodulin Binding Buffer	Not applicable.
Calmodulin Elution Buffer	Not applicable.

### Special packaging requirements

<b>Tactile warning of danger</b>	:	β-Mercaptoethanol	Not applicable.
		pNTAP-A Expression Vector	Not applicable.
		pNTAP-B Expression Vector	Not applicable.
		pNTAP-C Expression Vector	Not applicable.
		pNTAP-Mef2a Expression Control Vector	Not applicable.
		pCMV-Tag2-Mef2c Expression Control Vector	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	Not applicable.
		Supplement	
		MS-Grade Calmodulin Resin	Not applicable.
		Calmodulin Binding Buffer	Not applicable.
		Calmodulin Elution Buffer	Not applicable.

### 2.3 Other hazards

<b>Other hazards which do not result in classification</b>	:	β-Mercaptoethanol	None known.
		pNTAP-A Expression Vector	None known.
		pNTAP-B Expression Vector	None known.
		pNTAP-C Expression Vector	None known.
		pNTAP-Mef2a Expression Control Vector	None known.
		pCMV-Tag2-Mef2c Expression Control Vector	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	None known.
		Supplement	
		MS-Grade Calmodulin Resin	None known.

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## SECTION 2: Hazards identification

Calmodulin Binding None known.  
 Buffer  
 Calmodulin Elution Buffer None known.

## SECTION 3: Composition/information on ingredients

<b>3.1 Substances</b>	:	β-Mercaptoethanol	Mono-constituent substance
		pNTAP-A Expression Vector	Mixture
		pNTAP-B Expression Vector	Mixture
		pNTAP-C Expression Vector	Mixture
		pNTAP-Mef2a Expression	Mixture
		Control Vector	
		pCMV-Tag2-Mef2c Expression	Mixture
		Control Vector	
		Lysis Buffer	Mixture
		0.5 M EDTA	Mixture
		Streptavidin Resin	Mixture
		Streptavidin Binding Buffer	Mixture
		Streptavidin Elution Buffer	Mixture
		Streptavidin Supernatant	Mixture
		Supplement	
		MS-Grade Calmodulin Resin	Mixture
		Calmodulin Binding Buffer	Mixture
		Calmodulin Elution Buffer	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	EC: 200-464-6 CAS: 60-24-2	100	Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411	[A]
<b>Lysis Buffer</b> Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤0.3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
<b>0.5 M EDTA</b> Edetic acid	EC: 200-449-4 CAS: 60-00-4 Index: 607-429-00-8	≥10 - ≤25	Eye Irrit. 2, H319	[1]
<b>Streptavidin Resin</b> Ethanol	EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5	≥10 - ≤25	Flam. Liq. 2, H225	[2]
<b>Streptavidin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤0.3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
<b>Streptavidin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤0.3	Acute Tox. 4, H302 Skin Irrit. 2, H315	[1] [5]

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**SECTION 3: Composition/information on ingredients**

<b>Streptavidin Supernatant Supplement</b>			Eye Dam. 1, H318 Aquatic Chronic 2, H411	
calcium chloride	EC: 233-140-8 CAS: 10043-52-4 Index: 017-013-00-2	≤3	Eye Irrit. 2, H319	[1]
Imidazole	EC: 206-019-2 CAS: 288-32-4 Index: 613-319-00-0	<1	Acute Tox. 4, H302 Skin Corr. 1C, H314 Repr. 1B, H360D (Unborn child)	[1]
<b>MS-Grade Calmodulin Resin</b>				
Ethanol	EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5	≥10 - ≤25	Flam. Liq. 2, H225	[2]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]
<b>Calmodulin Binding Buffer</b>				
Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤0.3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
<b>Calmodulin Elution Buffer</b>				
Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤0.3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411  <b>See Section 16 for the full text of the H statements declared above.</b>	[1] [5]

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.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy
- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

<b>Eye contact</b>	: β-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.
	pNTAP-A Expression 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.
	pNTAP-B Expression	Immediately flush eyes with plenty of water, occasionally

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Vector	lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
pNTAP-C Expression 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.
pNTAP-Mef2a Expression 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.
pCMV-Tag2-Mef2c Expression 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.
Lysis 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.
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 if irritation occurs.
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 if irritation occurs.
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.
<b>Inhalation</b> : $\beta$ -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.
pNTAP-A Expression Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
pNTAP-B Expression Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
pNTAP-C Expression Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if

## SECTION 4: First aid measures

pNTAP-Mef2a Expression Control Vector	symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
pCMV-Tag2-Mef2c Expression Control Vector	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 position comfortable for breathing. Get medical attention if symptoms occur.
0.5 M EDTA	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 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.
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 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.
Calmodulin Binding Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Calmodulin Elution Buffer	Remove victim to fresh air and keep at rest in a position

## SECTION 4: First aid measures

		comfortable for breathing. Get medical attention if symptoms occur.
<b>Skin contact</b>	: $\beta$ -Mercaptoethanol	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.
	pNTAP-A Expression Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pNTAP-B Expression Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pNTAP-C Expression Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pNTAP-Mef2a Expression Control Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pCMV-Tag2-Mef2c Expression Control Vector	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. Get medical attention if symptoms occur. 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. Get medical attention if symptoms occur. 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.

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<b>Ingestion</b>	: $\beta$ -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.
	pNTAP-A Expression 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.
	pNTAP-B Expression 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.
	pNTAP-C Expression 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.
	pNTAP-Mef2a Expression 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.
	pCMV-Tag2-Mef2c Expression 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.
	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 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

## SECTION 4: First aid measures

	position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Streptavidin 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 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.
Streptavidin 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.
Streptavidin 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.
Streptavidin Supernatant Supplement	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.
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 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.
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.

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<p>Calmodulin Elution Buffer</p> <p><b>Protection of first-aiders</b> : <math>\beta</math>-Mercaptoethanol</p> <p>pNTAP-A Expression Vector</p> <p>pNTAP-B Expression Vector</p> <p>pNTAP-C Expression Vector</p> <p>pNTAP-Mef2a Expression Control Vector</p> <p>pCMV-Tag2-Mef2c Expression Control Vector</p> <p>Lysis Buffer</p> <p>0.5 M EDTA</p> <p>Streptavidin Resin</p> <p>Streptavidin Binding Buffer</p> <p>Streptavidin Elution Buffer</p> <p>Streptavidin Supernatant Supplement</p> <p>MS-Grade Calmodulin Resin</p> <p>Calmodulin Binding Buffer</p> <p>Calmodulin Elution Buffer</p>	<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> <p>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.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>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.</p> <p>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.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>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.</p> <p>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.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p> <p>No action shall be taken involving any personal risk or without suitable training.</p>
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### 4.2 Most important symptoms and effects, both acute and delayed

#### Potential acute health effects



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	Vector	
	pNTAP-Mef2a	No known significant effects or critical hazards.
	Expression Control	
	Vector	
	pCMV-Tag2-Mef2c	No known significant effects or critical hazards.
	Expression Control	
	Vector	
	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	No known significant effects or critical hazards.
	Buffer	
	Streptavidin Elution	No known significant effects or critical hazards.
	Buffer	
	Streptavidin Supernatant	No known significant effects or critical hazards.
	Supplement	
	MS-Grade Calmodulin	No known significant effects or critical hazards.
	Resin	
	Calmodulin Binding	No known significant effects or critical hazards.
	Buffer	
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
<b>Ingestion</b>	: $\beta$ -Mercaptoethanol	Toxic if swallowed.
	pNTAP-A Expression	No known significant effects or critical hazards.
	Vector	
	pNTAP-B Expression	No known significant effects or critical hazards.
	Vector	
	pNTAP-C Expression	No known significant effects or critical hazards.
	Vector	
	pNTAP-Mef2a	No known significant effects or critical hazards.
	Expression Control	
	Vector	
	pCMV-Tag2-Mef2c	No known significant effects or critical hazards.
	Expression Control	
	Vector	
	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	No known significant effects or critical hazards.
	Buffer	
	Streptavidin Elution	No known significant effects or critical hazards.
	Buffer	
	Streptavidin Supernatant	No known significant effects or critical hazards.
	Supplement	
	MS-Grade Calmodulin	No known significant effects or critical hazards.
	Resin	
	Calmodulin Binding	No known significant effects or critical hazards.
	Buffer	
	Calmodulin Elution Buffer	No known significant effects or critical hazards.

### Over-exposure signs/symptoms

<b>Eye contact</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	pNTAP-A Expression	No specific data.
	Vector	
	pNTAP-B Expression	No specific data.
	Vector	
	pNTAP-C Expression	No specific data.
	Vector	
	pNTAP-Mef2a	No specific data.
	Expression Control	

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	Vector	
	pCMV-Tag2-Mef2c	No specific data.
	Expression Control	
	Vector	
	Lysis Buffer	No specific data.
	0.5 M EDTA	Adverse symptoms may include the following: pain or irritation watering redness
	Streptavidin Resin	No specific data.
	Streptavidin Binding	No specific data.
	Buffer	
	Streptavidin Elution	No specific data.
	Buffer	
	Streptavidin Supernatant	No specific data.
	Supplement	
	MS-Grade Calmodulin	No specific data.
	Resin	
	Calmodulin Binding	No specific data.
	Buffer	
	Calmodulin Elution Buffer	No specific data.
<b>Inhalation</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
	pNTAP-A Expression	No specific data.
	Vector	
	pNTAP-B Expression	No specific data.
	Vector	
	pNTAP-C Expression	No specific data.
	Vector	
	pNTAP-Mef2a	No specific data.
	Expression Control	
	Vector	
	pCMV-Tag2-Mef2c	No specific data.
	Expression Control	
	Vector	
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	No specific data.
	Streptavidin Binding	No specific data.
	Buffer	
	Streptavidin Elution	No specific data.
	Buffer	
	Streptavidin Supernatant	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	Supplement	No specific data.
	MS-Grade Calmodulin	No specific data.
	Resin	
	Calmodulin Binding	No specific data.
	Buffer	
	Calmodulin Elution Buffer	No specific data.
<b>Skin contact</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	pNTAP-A Expression	No specific data.
	Vector	
	pNTAP-B Expression	No specific data.
	Vector	

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	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	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 foetal weight increase in foetal deaths skeletal malformations
	MS-Grade Calmodulin Resin	No specific data.
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
<b>Ingestion</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: stomach pains
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	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 foetal weight increase in foetal 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 any immediate medical attention and special treatment needed

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<b>Notes to physician</b>	: β-Mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-A Expression Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-B Expression Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-C Expression Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-Mef2a Expression Control Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pCMV-Tag2-Mef2c Expression Control Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	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.
<b>Specific treatments</b>	: β-Mercaptoethanol	No specific treatment.
	pNTAP-A Expression Vector	No specific treatment.
	pNTAP-B Expression Vector	No specific treatment.
	pNTAP-C Expression Vector	No specific treatment.
	pNTAP-Mef2a Expression Control Vector	No specific treatment.
	pCMV-Tag2-Mef2c Expression Control Vector	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.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: $\beta$ -Mercaptoethanol	Use an extinguishing agent suitable for the surrounding fire.	
	pNTAP-A Expression Vector	Use an extinguishing agent suitable for the surrounding fire.	
	pNTAP-B Expression Vector	Use an extinguishing agent suitable for the surrounding fire.	
	pNTAP-C Expression Vector	Use an extinguishing agent suitable for the surrounding fire.	
	pNTAP-Mef2a Expression Control Vector	Use an extinguishing agent suitable for the surrounding fire.	
	pCMV-Tag2-Mef2c Expression Control Vector	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 <sub>2</sub> , 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 <sub>2</sub> , 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 surrounding fire.	
	<b>Unsuitable extinguishing media</b>	: $\beta$ -Mercaptoethanol	None known.
		pNTAP-A Expression Vector	None known.
pNTAP-B Expression Vector		None known.	
pNTAP-C Expression Vector		None known.	
pNTAP-Mef2a Expression Control Vector		None known.	
pCMV-Tag2-Mef2c Expression Control Vector		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

## SECTION 5: Firefighting measures

<b>Hazards from the substance or mixture</b>	: $\beta$ -Mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	pNTAP-A Expression Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	pNTAP-B Expression Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	pNTAP-C Expression Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	pNTAP-Mef2a Expression Control Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	pCMV-Tag2-Mef2c Expression Control Vector	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 vapour. 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 vapour. 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.	
<b>Hazardous combustion products</b>	: $\beta$ -Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	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

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Streptavidin Binding Buffer	carbon monoxide 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 precautions 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.
pNTAP-A Expression 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.
pNTAP-B Expression 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.
pNTAP-C Expression 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.
pNTAP-Mef2a Expression 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 without suitable training.
pCMV-Tag2-Mef2c Expression 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 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	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.

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	Resin	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 action shall be taken involving any personal risk or without suitable training.
	Calmodulin 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.
<b>Special protective equipment for fire-fighters</b>	: $\beta$ -Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	pNTAP-A Expression Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	pNTAP-B Expression Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	pNTAP-C Expression Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	pNTAP-Mef2a Expression 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	pCMV-Tag2-Mef2c Expression 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	0.5 M EDTA	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Streptavidin Resin	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves)

## SECTION 5: Firefighting measures

Streptavidin Binding Buffer	conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Streptavidin Elution Buffer	conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Streptavidin Supernatant Supplement	conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
MS-Grade Calmodulin Resin	conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Calmodulin Binding Buffer	conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Calmodulin Elution Buffer	conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	: $\beta$ -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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	pNTAP-A Expression 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 spilt material. Put on appropriate personal protective equipment.
	pNTAP-B Expression 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 spilt material. Put on appropriate personal protective equipment.
	pNTAP-C Expression Vector	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering.

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pNTAP-Mef2a Expression Control Vector	Do not touch or walk through spilt 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 spilt material. Put on appropriate personal protective equipment.
pCMV-Tag2-Mef2c Expression 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 spilt material. Put on appropriate personal protective equipment.
Lysis 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 spilt 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 spilt material. Avoid breathing vapour 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour 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 spilt 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 spilt 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 spilt material. Avoid breathing vapour 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour 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 risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering.

**SECTION 6: Accidental release measures**

**For emergency responders**

Calmodulin Elution Buffer	Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
: β-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 spilt material. Put on appropriate personal protective equipment.
pNTAP-A Expression Vector	If specialised 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".
pNTAP-B Expression Vector	If specialised 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".
pNTAP-C Expression Vector	If specialised 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".
pNTAP-Mef2a Expression Control Vector	If specialised 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".
pCMV-Tag2-Mef2c Expression Control Vector	If specialised 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".
Lysis Buffer	If specialised 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 specialised 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 specialised 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 specialised 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 specialised 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 specialised 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 specialised 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 specialised 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-

## SECTION 6: Accidental release measures

### 6.2 Environmental precautions

	Calmodulin Elution Buffer	emergency personnel". If specialised 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".
	: $\beta$ -Mercaptoethanol	Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
	pNTAP-A Expression Vector	Avoid dispersal of spilt 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).
	pNTAP-B Expression Vector	Avoid dispersal of spilt 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).
	pNTAP-C Expression Vector	Avoid dispersal of spilt 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).
	pNTAP-Mef2a Expression Control Vector	Avoid dispersal of spilt 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).
	pCMV-Tag2-Mef2c Expression Control Vector	Avoid dispersal of spilt 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 spilt 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 spilt 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 spilt 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 spilt 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 Elution Buffer	Avoid dispersal of spilt 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 spilt 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 spilt 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 spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant

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	authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Calmodulin Elution Buffer	Avoid dispersal of spilt 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 material for containment and cleaning up

**Methods for cleaning up** :  $\beta$ -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.
pNTAP-A Expression 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.
pNTAP-B Expression 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.
pNTAP-C Expression 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.
pNTAP-Mef2a Expression 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.
pCMV-Tag2-Mef2c Expression 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.
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 appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Streptavidin 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.
Streptavidin Elution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively,

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	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.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: $\beta$ -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 vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
pNTAP-A Expression Vector		Put on appropriate personal protective equipment (see Section 8).
pNTAP-B Expression Vector		Put on appropriate personal protective equipment (see Section 8).
pNTAP-C Expression Vector		Put on appropriate personal protective equipment (see Section 8).
pNTAP-Mef2a Expression Control Vector		Put on appropriate personal protective equipment (see Section 8).
pCMV-Tag2-Mef2c Expression Control Vector		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 vapour or mist. Keep in the original container or an approved alternative made from a

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		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 ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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 vapour 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 ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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).
<b>Advice on general occupational hygiene</b>	: β-Mercaptoethanol	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.
	pNTAP-A Expression 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,

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pNTAP-B Expression Vector	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.
pNTAP-C Expression 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.
pNTAP-Mef2a Expression 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.
pCMV-Tag2-Mef2c Expression 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.
Lysis Buffer	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.
0.5 M EDTA	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.
Streptavidin Resin	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.
Streptavidin Binding Buffer	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.
Streptavidin Elution Buffer	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.
Streptavidin Supernatant Supplement	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

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MS-Grade Calmodulin Resin	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.
Calmodulin Binding Buffer	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.
Calmodulin Elution Buffer	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.

### 7.2 Conditions for safe storage, including any incompatibilities

<b>Storage</b>	:  -Mercaptoethanol	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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	pNTAP-A Expression 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	pNTAP-B Expression 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	pNTAP-C Expression 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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pNTAP-Mef2a Expression 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
pCMV-Tag2-Mef2c Expression 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Lysis 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
0.5 M EDTA	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 unlabelled 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. 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 unlabelled 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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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 unlabelled 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 in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
MS-Grade Calmodulin 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. 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 unlabelled 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 unlabelled 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

### Danger criteria

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## SECTION 7: Handling and storage

Category	Notification and MAPP threshold	Safety report threshold
<b>β-Mercaptoethanol</b> H2 E2	50 200	200 500
<b>Streptavidin Resin</b> P5c	5000	50000
<b>MS-Grade Calmodulin Resin</b> P5c	5000	50000

### 7.3 Specific end use(s)

#### Recommendations

β-Mercaptoethanol	Industrial applications, Professional applications.
pNTAP-A Expression Vector	Industrial applications, Professional applications.
pNTAP-B Expression Vector	Industrial applications, Professional applications.
pNTAP-C Expression Vector	Industrial applications, Professional applications.
pNTAP-Mef2a Expression Control Vector	Industrial applications, Professional applications.
pCMV-Tag2-Mef2c Expression Control Vector	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.
pNTAP-A Expression Vector	Not applicable.
pNTAP-B Expression Vector	Not applicable.
pNTAP-C Expression Vector	Not applicable.
pNTAP-Mef2a Expression Control Vector	Not applicable.
pCMV-Tag2-Mef2c Expression Control Vector	Not applicable.
Lysis Buffer	Not applicable.
0.5 M EDTA	Not applicable.
Streptavidin Resin	Not applicable.
Streptavidin Binding Buffer	Not applicable.
Streptavidin Elution	Not applicable.

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## SECTION 7: Handling and storage

Buffer	
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

Product/ingredient name	Exposure limit values
<b>Streptavidin Resin</b> Ethanol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 1000 ppm 8 hours. TWA: 1920 mg/m <sup>3</sup> 8 hours.
<b>MS-Grade Calmodulin Resin</b> Ethanol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 1000 ppm 8 hours. TWA: 1920 mg/m <sup>3</sup> 8 hours.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

No DNELs/DMELs available.

#### PNECs

No PNECs available

### 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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Individual protection measures

**Hygiene measures** : 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.

## SECTION 8: Exposure controls/personal protection

- 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. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- 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.
- 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: $\beta$ -Mercaptoethanol	Liquid.
	pNTAP-A Expression Vector	Liquid.
	pNTAP-B Expression Vector	Liquid.
	pNTAP-C Expression Vector	Liquid.
	pNTAP-Mef2a Expression Control Vector	Liquid.
	pCMV-Tag2-Mef2c Expression Control Vector	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.

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	Calmodulin Binding Buffer	Liquid.
	Calmodulin Elution Buffer	Liquid.
<b>Colour</b>	: $\beta$ -Mercaptoethanol	Colourless.
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Odour</b>	: $\beta$ -Mercaptoethanol	Characteristic.
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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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	Buffer	
<b>Odour threshold</b>	: $\beta$ -Mercaptoethanol	Not available.
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>pH</b>	: $\beta$ -Mercaptoethanol	Not available.
	pNTAP-A Expression Vector	7.5
	pNTAP-B Expression Vector	7.5
	pNTAP-C Expression Vector	7.5
	pNTAP-Mef2a Expression Control Vector	7.5
	pCMV-Tag2-Mef2c Expression Control Vector	7.5
	Lysis Buffer	8
	0.5 M EDTA	8
	Streptavidin Resin	7.5
	Streptavidin Binding Buffer	8
	Streptavidin Elution Buffer	8
	Streptavidin Supernatant Supplement	Not available.
	MS-Grade Calmodulin Resin	7.5
	Calmodulin Binding Buffer	8
	Calmodulin Elution Buffer	8

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## SECTION 9: Physical and chemical properties

<b>Melting point/freezing point</b>	:	β-Mercaptoethanol	<-100°C	
		pNTAP-A Expression Vector	0°C	
		pNTAP-B Expression Vector	0°C	
		pNTAP-C Expression Vector	0°C	
		pNTAP-Mef2a Expression Control Vector	0°C	
		pCMV-Tag2-Mef2c Expression Control Vector	0°C	
		Lysis Buffer	0°C	
		0.5 M EDTA	Not available.	
		Streptavidin Resin	Not available.	
		Streptavidin Binding Buffer	0°C	
		Streptavidin Elution Buffer	0°C	
		Streptavidin Supernatant Supplement	0°C	
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	0°C	
		Calmodulin Elution Buffer	0°C	
	<b>Initial boiling point and boiling range</b>	:	β-Mercaptoethanol	155.8°C
			pNTAP-A Expression Vector	100°C
			pNTAP-B Expression Vector	100°C
			pNTAP-C Expression Vector	100°C
			pNTAP-Mef2a Expression Control Vector	100°C
			pCMV-Tag2-Mef2c Expression Control Vector	100°C
			Lysis Buffer	100°C
			0.5 M EDTA	Not available.
			Streptavidin Resin	Not available.
			Streptavidin Binding Buffer	100°C
			Streptavidin Elution Buffer	100°C
			Streptavidin Supernatant Supplement	100°C
		MS-Grade Calmodulin Resin	Not available.	
		Calmodulin Binding Buffer	100°C	
		Calmodulin Elution Buffer	100°C	



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<b>Flammability (solid, gas)</b>	: $\beta$ -Mercaptoethanol	Not applicable.
	pNTAP-A Expression Vector	Not applicable.
	pNTAP-B Expression Vector	Not applicable.
	pNTAP-C Expression Vector	Not applicable.
	pNTAP-Mef2a Expression Control Vector	Not applicable.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Upper/lower flammability or explosive limits</b>	: $\beta$ -Mercaptoethanol	Lower: 2.3% Upper: 18%
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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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## SECTION 9: Physical and chemical properties

<b>Vapour pressure</b>	:	<ul style="list-style-type: none"> <li>β-Mercaptoethanol 0.13 kPa [room temperature]</li> <li>pNTAP-A Expression Vector Not available.</li> <li>pNTAP-B Expression Vector Not available.</li> <li>pNTAP-C Expression Vector Not available.</li> <li>pNTAP-Mef2a Expression Control Vector Not available.</li> <li>pCMV-Tag2-Mef2c Expression Control Vector Not available.</li> <li>Lysis Buffer Not available.</li> <li>0.5 M EDTA Not available.</li> <li>Streptavidin Resin Not available.</li> <li>Streptavidin Binding Buffer Not available.</li> <li>Streptavidin Elution Buffer Not available.</li> <li>Streptavidin Supernatant Supplement Not available.</li> <li>MS-Grade Calmodulin Resin Not available.</li> <li>Calmodulin Binding Buffer Not available.</li> <li>Calmodulin Elution Buffer Not available.</li> </ul>
<b>Vapour density</b>	:	<ul style="list-style-type: none"> <li>β-Mercaptoethanol 2.7 [Air = 1]</li> <li>pNTAP-A Expression Vector Not available.</li> <li>pNTAP-B Expression Vector Not available.</li> <li>pNTAP-C Expression Vector Not available.</li> <li>pNTAP-Mef2a Expression Control Vector Not available.</li> <li>pCMV-Tag2-Mef2c Expression Control Vector Not available.</li> <li>Lysis Buffer Not available.</li> <li>0.5 M EDTA Not available.</li> <li>Streptavidin Resin Not available.</li> <li>Streptavidin Binding Buffer Not available.</li> <li>Streptavidin Elution Buffer Not available.</li> <li>Streptavidin Supernatant Supplement Not available.</li> <li>MS-Grade Calmodulin Resin Not available.</li> <li>Calmodulin Binding Buffer Not available.</li> <li>Calmodulin Elution Buffer Not available.</li> </ul>

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## SECTION 9: Physical and chemical properties

<b>Relative density</b>	:	β-Mercaptoethanol	1.1
		pNTAP-A Expression Vector	Not available.
		pNTAP-B Expression Vector	Not available.
		pNTAP-C Expression Vector	Not available.
		pNTAP-Mef2a Expression Control Vector	Not available.
		pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Solubility(ies)</b>	:	β-Mercaptoethanol	Easily soluble in the following materials: cold water and hot water.
		pNTAP-A Expression Vector	Easily soluble in the following materials: cold water and hot water.
		pNTAP-B Expression Vector	Easily soluble in the following materials: cold water and hot water.
		pNTAP-C Expression Vector	Easily soluble in the following materials: cold water and hot water.
		pNTAP-Mef2a Expression Control Vector	Easily soluble in the following materials: cold water and hot water.
		pCMV-Tag2-Mef2c Expression Control Vector	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.

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## SECTION 9: Physical and chemical properties

	Buffer	hot water.	
<b>Partition coefficient: n-octanol/water</b>	: β-Mercaptoethanol	-0.056	
	pNTAP-A Expression Vector	Not available.	
	pNTAP-B Expression Vector	Not available.	
	pNTAP-C Expression Vector	Not available.	
	pNTAP-Mef2a Expression Control Vector	Not available.	
	pCMV-Tag2-Mef2c Expression Control Vector	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.	
	<b>Auto-ignition temperature</b>	: β-Mercaptoethanol	295°C
		pNTAP-A Expression Vector	Not available.
		pNTAP-B Expression Vector	Not available.
		pNTAP-C Expression Vector	Not available.
pNTAP-Mef2a Expression Control Vector		Not available.	
pCMV-Tag2-Mef2c Expression Control Vector		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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## SECTION 9: Physical and chemical properties

<b>Decomposition temperature</b>	: $\beta$ -Mercaptoethanol	Not available.
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Viscosity</b>	: $\beta$ -Mercaptoethanol	Dynamic (room temperature): 3.43 mPa·s
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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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## SECTION 9: Physical and chemical properties

<b>Explosive properties</b>	:	β-Mercaptoethanol	Not available.	
		pNTAP-A Expression Vector	Not available.	
		pNTAP-B Expression Vector	Not available.	
		pNTAP-C Expression Vector	Not available.	
		pNTAP-Mef2a Expression Control Vector	Not available.	
		pCMV-Tag2-Mef2c Expression Control Vector	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.	
	<b>Oxidising properties</b>	:	β-Mercaptoethanol	Not available.
			pNTAP-A Expression Vector	Not available.
			pNTAP-B Expression Vector	Not available.
			pNTAP-C Expression Vector	Not available.
			pNTAP-Mef2a Expression Control Vector	Not available.
		pCMV-Tag2-Mef2c Expression Control Vector	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.	

### 9.2 Other information

Date of issue/Date of revision : 23/01/2018

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## SECTION 9: Physical and chemical properties

No additional information.

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	: $\beta$ -Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-A Expression Vector	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-B Expression Vector	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-C Expression Vector	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-Mef2a Expression Control Vector	No specific test data related to reactivity available for this product or its ingredients.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>10.2 Chemical stability</b>	: $\beta$ -Mercaptoethanol	The product is stable.
	pNTAP-A Expression Vector	The product is stable.
	pNTAP-B Expression Vector	The product is stable.
	pNTAP-C Expression Vector	The product is stable.
	pNTAP-Mef2a Expression Control Vector	The product is stable.
	pCMV-Tag2-Mef2c Expression Control Vector	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	The product is stable.

## SECTION 10: Stability and reactivity

Buffer  
Calmodulin Elution Buffer The product is stable.

### 10.3 Possibility of hazardous reactions

: $\beta$ -Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
pNTAP-A Expression Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
pNTAP-B Expression Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
pNTAP-C Expression Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
pNTAP-Mef2a Expression Control Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
pCMV-Tag2-Mef2c Expression Control Vector	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

: $\beta$ -Mercaptoethanol	No specific data.
pNTAP-A Expression Vector	No specific data.
pNTAP-B Expression Vector	No specific data.
pNTAP-C Expression Vector	No specific data.
pNTAP-Mef2a Expression Control Vector	No specific data.
pCMV-Tag2-Mef2c Expression Control Vector	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 flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Streptavidin Binding Buffer	No specific data.
Streptavidin Elution Buffer	No specific data.
Streptavidin Supernatant Supplement	No specific data.
MS-Grade Calmodulin	Avoid all possible sources of ignition (spark or flame). Do not

## SECTION 10: Stability and reactivity

Resin	pressurise, 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	May react or be incompatible with oxidising materials.
pNTAP-A Expression Vector	May react or be incompatible with oxidising materials.
pNTAP-B Expression Vector	May react or be incompatible with oxidising materials.
pNTAP-C Expression Vector	May react or be incompatible with oxidising materials.
pNTAP-Mef2a Expression Control Vector	May react or be incompatible with oxidising materials.
pCMV-Tag2-Mef2c Expression Control Vector	May react or be incompatible with oxidising materials.
Lysis Buffer	May react or be incompatible with oxidising materials.
0.5 M EDTA	May react or be incompatible with oxidising materials.
Streptavidin Resin	Reactive or incompatible with the following materials: oxidizing materials
Streptavidin Binding Buffer	May react or be incompatible with oxidising materials.
Streptavidin Elution Buffer	May react or be incompatible with oxidising materials.
Streptavidin Supernatant Supplement	May react or be incompatible with oxidising materials.
MS-Grade Calmodulin Resin	Reactive or incompatible with the following materials: oxidizing materials
Calmodulin Binding Buffer	May react or be incompatible with oxidising materials.
Calmodulin Elution Buffer	May react or be incompatible with oxidising materials.

### 10.6 Hazardous decomposition products

β-Mercaptoethanol	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
pNTAP-A Expression Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
pNTAP-B Expression Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
pNTAP-C Expression Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
pNTAP-Mef2a Expression Control Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
pCMV-Tag2-Mef2c Expression Control Vector	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	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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## SECTION 10: Stability and reactivity

Supplement	decomposition products should not be produced.
MS-Grade Calmodulin Resin	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Calmodulin Binding Buffer	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
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-
<b>Lysis Buffer</b> Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-
<b>Streptavidin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-
<b>Streptavidin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-
<b>Streptavidin Supernatant Supplement</b> calcium chloride Imidazole	LD50 Oral LD50 Oral	Rat Rat	1 g/kg 220 mg/kg	- -
<b>MS-Grade Calmodulin Resin</b> Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
<b>Calmodulin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-
<b>Calmodulin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-

#### Acute toxicity estimates

Not available.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
<b>Lysis Buffer</b> Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-

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<b>Streptavidin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-
<b>Streptavidin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-
<b>MS-Grade Calmodulin Resin</b> Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>Calmodulin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-
<b>Calmodulin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-

**Skin** : **240105-51**: Repeated exposure may cause skin dryness or cracking.

### Sensitiser

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on likely routes of exposure

β-Mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation.
pNTAP-A Expression Vector	Not available.
pNTAP-B Expression Vector	Not available.
pNTAP-C Expression Vector	Not available.
pNTAP-Mef2a Expression Control Vector	Not available.
pCMV-Tag2-Mef2c Expression Control Vector	Not available.

**Date of issue/Date of revision** : 23/01/2018

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

### Potential acute health effects

#### **Inhalation**

: $\beta$ -Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
pNTAP-A Expression Vector	No known significant effects or critical hazards.
pNTAP-B Expression Vector	No known significant effects or critical hazards.
pNTAP-C Expression Vector	No known significant effects or critical hazards.
pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
pCMV-Tag2-Mef2c Expression Control Vector	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**

: $\beta$ -Mercaptoethanol	Toxic if swallowed.
pNTAP-A Expression Vector	No known significant effects or critical hazards.
pNTAP-B Expression Vector	No known significant effects or critical hazards.
pNTAP-C Expression Vector	No known significant effects or critical hazards.
pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
pCMV-Tag2-Mef2c Expression Control Vector	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	No known significant effects or critical hazards.

## SECTION 11: Toxicological information

	Buffer		
	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.	
<b>Skin contact</b>	: $\beta$ -Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.	
	pNTAP-A Expression Vector	No known significant effects or critical hazards.	
	pNTAP-B Expression Vector	No known significant effects or critical hazards.	
	pNTAP-C Expression Vector	No known significant effects or critical hazards.	
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.	
	pCMV-Tag2-Mef2c Expression Control Vector	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.	
<b>Eye contact</b>	: $\beta$ -Mercaptoethanol	Causes serious eye damage.	
	pNTAP-A Expression Vector	No known significant effects or critical hazards.	
	pNTAP-B Expression Vector	No known significant effects or critical hazards.	
	pNTAP-C Expression Vector	No known significant effects or critical hazards.	
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.	
	pCMV-Tag2-Mef2c Expression Control Vector	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	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	No known significant effects or critical hazards.	



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## SECTION 11: Toxicological information

	MS-Grade Calmodulin Resin	No specific data.
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
<b>Skin contact</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	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 foetal weight increase in foetal deaths skeletal malformations
	MS-Grade Calmodulin Resin	No specific data.
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
<b>Eye contact</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	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	No specific data.
	Streptavidin Binding Buffer	No specific data.

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## SECTION 11: Toxicological information

Streptavidin Elution Buffer	No specific data.
Streptavidin Supernatant Supplement	No specific data.
MS-Grade Calmodulin Resin	No specific data.
Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

**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

<b>General</b>	: $\beta$ -Mercaptoethanol	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Carcinogenicity</b>	: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control	No known significant effects or critical hazards.

## SECTION 11: Toxicological information

	Vector	
	pCMV-Tag2-Mef2c Expression Control	No known significant effects or critical hazards.
	Vector	
	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.
<b>Mutagenicity</b>	: β-Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control	No known significant effects or critical hazards.
	Vector	
	pCMV-Tag2-Mef2c Expression Control	No known significant effects or critical hazards.
	Vector	
	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.
<b>Teratogenicity</b>	: β-Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control	No known significant effects or critical hazards.
	Vector	
	pCMV-Tag2-Mef2c Expression Control	No known significant effects or critical hazards.
	Vector	
	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.

## SECTION 11: Toxicological information

	Streptavidin Binding Buffer	No known significant effects or critical hazards.
	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.
<b>Developmental effects</b>	: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Fertility effects</b>	: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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	No known significant effects or critical hazards.

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## SECTION 11: Toxicological information

Resin  
 Calmodulin Binding No known significant effects or critical hazards.  
 Buffer  
 Calmodulin Elution Buffer No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>Lysis Buffer</b> Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
<b>0.5 M EDTA</b> 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
<b>Streptavidin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
<b>Streptavidin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
<b>Streptavidin Supernatant Supplement</b> 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
<b>MS-Grade Calmodulin Resin</b> 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 Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks
<b>Calmodulin Binding Buffer</b>			

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**SECTION 12: Ecological information**

Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
<b>Calmodulin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours

**12.2 Persistence and degradability**

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>Lysis Buffer</b> Polyoxyethylene octyl phenyl ether	-	-	Readily
<b>0.5 M EDTA</b> Edetic acid	-	-	Not readily
<b>Streptavidin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	-	-	Readily
<b>Streptavidin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	-	-	Readily
<b>Streptavidin Supernatant Supplement</b> calcium chloride	-	-	Readily
<b>Calmodulin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	-	-	Readily
<b>Calmodulin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	-	-	Readily

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	-0.056	-	low
<b>Lysis Buffer</b> Polyoxyethylene octyl phenyl ether	4.86	-	high
<b>0.5 M EDTA</b> Edetic acid	-3.86	1.8	low
<b>Streptavidin Binding Buffer</b>			

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Polyoxyethylene octyl phenyl ether	4.86	-	high
<b>Streptavidin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	4.86	-	high
<b>Streptavidin Supernatant Supplement</b> calcium chloride	<3	-	low
Imidazole	-0.02	-	low
<b>Calmodulin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	4.86	-	high
<b>Calmodulin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	4.86	-	high

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**12.5 Results of PBT and vPvB assessment**

**PBT** : Not applicable.

**vPvB** : Not applicable.

**12.6 Other adverse effects** : No known significant effects or critical hazards.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

Product

**Methods of disposal** : The generation of waste should be avoided or minimised 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.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

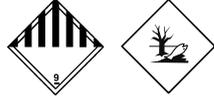
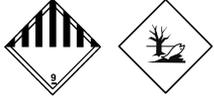
Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

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## SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN3316	UN3316	UN3316
14.2 UN proper shipping name	CHEMICAL KIT	CHEMICAL KIT	Chemical kit
14.3 Transport hazard class(es)	9 	9 	9 
14.4 Packing group	II	II	II
14.5 Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

### Additional information

Remarks: Excepted Quantity

- ADR/RID** :  The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Hazard identification number** 90  
**Limited quantity** See SP 251  
**Special provisions** 251, 340  
**Tunnel code** (E)
- 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

**14.6 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.

**14.7 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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

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## SECTION 15: Regulatory information

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
<b>Lysis Buffer</b> Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014
<b>Streptavidin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014
<b>Streptavidin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014
<b>Calmodulin Binding Buffer</b> Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014
<b>Calmodulin Elution Buffer</b> Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014

<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	: $\beta$ -Mercaptoethanol	Not applicable.
	pNTAP-A Expression Vector	Not applicable.
	pNTAP-B Expression Vector	Not applicable.
	pNTAP-C Expression Vector	Not applicable.
	pNTAP-Mef2a Expression Control Vector	Not applicable.
	pCMV-Tag2-Mef2c Expression Control Vector	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	Restricted to professional users.
	MS-Grade Calmodulin Resin	Not applicable.
	Calmodulin Binding Buffer	Not applicable.
Calmodulin Elution Buffer	Not applicable.	

### Other EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Listed

### Ozone depleting substances (1005/2009/EU)

Not listed.

### Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

### Seveso Directive

This product is controlled under the Seveso Directive.

### Danger criteria

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## SECTION 15: Regulatory information

### Category

β-Mercaptoethanol

H2

E2

Streptavidin Resin

P5c

MS-Grade Calmodulin Resin

P5c

### 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

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

### **15.2 Chemical safety assessment**

: This product contains substances for which Chemical Safety Assessments might still be required.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

InterPlay Mammalian TAP System, Part Number 240103

## SECTION 16: Other information

### Abbreviations and acronyms

: ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number

### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
<b>β-Mercaptoethanol</b> Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411	On basis of test data On basis of test data On basis of test data Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment
<b>0.5 M EDTA</b> Eye Irrit. 2, H319	Calculation method
<b>Streptavidin Resin</b> Flam. Liq. 3, H226	On basis of test data
<b>Streptavidin Supernatant Supplement</b> Repr. 1B, H360D (Unborn child)	Calculation method
<b>MS-Grade Calmodulin Resin</b> Flam. Liq. 3, H226	On basis of test data

### Full text of abbreviated H statements

<b>β-Mercaptoethanol</b> H301 H310 H315 H317 H318 H330 H335 H411	Toxic if swallowed. Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Fatal if inhaled. May cause respiratory irritation. Toxic to aquatic life with long lasting effects.
<b>Lysis Buffer</b> H302 H315 H318 H411	Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Toxic to aquatic life with long lasting effects.
<b>0.5 M EDTA</b> H319	Causes serious eye irritation.
<b>Streptavidin Resin</b> H225 H226	Highly flammable liquid and vapour. Flammable liquid and vapour.
<b>Streptavidin Binding Buffer</b> H302 H315 H318 H411	Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Toxic to aquatic life with long lasting effects.

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## SECTION 16: Other information

### Streptavidin Elution Buffer

H302  
H315  
H318  
H411

Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye damage.  
Toxic to aquatic life with long lasting effects.

### Streptavidin Supernatant Supplement

H302  
H314  
H319  
H360D

Harmful if swallowed.  
Causes severe skin burns and eye damage.  
Causes serious eye irritation.  
May damage the unborn child.

### MS-Grade Calmodulin Resin

H225  
H226  
H319

Highly flammable liquid and vapour.  
Flammable liquid and vapour.  
Causes serious eye irritation.

### Calmodulin Binding Buffer

H302  
H315  
H318  
H411

Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye damage.  
Toxic to aquatic life with long lasting effects.

### Calmodulin Elution Buffer

H302  
H315  
H318  
H411

Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye damage.  
Toxic to aquatic life with long lasting effects.

### [Full text of classifications \[CLP/GHS\]](#)

#### Mercaptoethanol

Acute Tox. 2, H310  
Acute Tox. 2, H330  
Acute Tox. 3, H301  
Aquatic Chronic 2, H411  
Eye Dam. 1, H318  
Skin Irrit. 2, H315  
Skin Sens. 1, H317  
STOT SE 3, H335

ACUTE TOXICITY (dermal) - Category 2  
ACUTE TOXICITY (inhalation) - Category 2  
ACUTE TOXICITY (oral) - Category 3  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
SKIN CORROSION/IRRITATION - Category 2  
SKIN SENSITISATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE  
(Respiratory tract irritation) - Category 3

#### Lysis Buffer

Acute Tox. 4, H302  
Aquatic Chronic 2, H411  
Eye Dam. 1, H318  
Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
SKIN CORROSION/IRRITATION - Category 2

#### 0.5 M EDTA

Eye Irrit. 2, H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

#### Streptavidin Resin

Flam. Liq. 2, H225  
Flam. Liq. 3, H226

FLAMMABLE LIQUIDS - Category 2  
FLAMMABLE LIQUIDS - Category 3

#### Streptavidin Binding Buffer

Acute Tox. 4, H302  
Aquatic Chronic 2, H411  
Eye Dam. 1, H318  
Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
SKIN CORROSION/IRRITATION - Category 2

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## SECTION 16: Other information

### Streptavidin Elution Buffer

Acute Tox. 4, H302  
Aquatic Chronic 2, H411  
Eye Dam. 1, H318  
Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
SKIN CORROSION/IRRITATION - Category 2

### Streptavidin Supernatant Supplement

Acute Tox. 4, H302  
Eye Irrit. 2, H319  
Repr. 1B, H360D  
Skin Corr. 1C, H314

ACUTE TOXICITY (oral) - Category 4  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
REPRODUCTIVE TOXICITY (Unborn child) - Category 1B  
SKIN CORROSION/IRRITATION - Category 1C

### MS-Grade Calmodulin Resin

Eye Irrit. 2, H319  
Flam. Liq. 2, H225  
Flam. Liq. 3, H226

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
FLAMMABLE LIQUIDS - Category 2  
FLAMMABLE LIQUIDS - Category 3

### Calmodulin Binding Buffer

Acute Tox. 4, H302  
Aquatic Chronic 2, H411  
Eye Dam. 1, H318  
Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
SKIN CORROSION/IRRITATION - Category 2

### Calmodulin Elution Buffer

Acute Tox. 4, H302  
Aquatic Chronic 2, H411  
Eye Dam. 1, H318  
Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
SKIN CORROSION/IRRITATION - Category 2

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#### Notice to reader

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