Custom CRISPR Activation & Interference Libraries

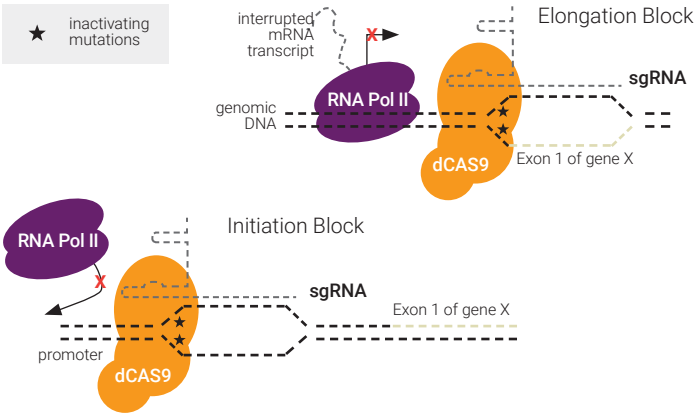
CRISPR interference (CRISPRi)

CRISPR/Cas can be harnessed to suppress the expression of genes by targeting a region of active transcription with a guide RNA and using a Cas9 protein that has been deactivated and fused to a repressor domain. This has been demonstrated to be a viable approach to high throughput screening and provides a method for RNA-guided gene deactivation that complements both CRISPR knock-outs and RNAi.

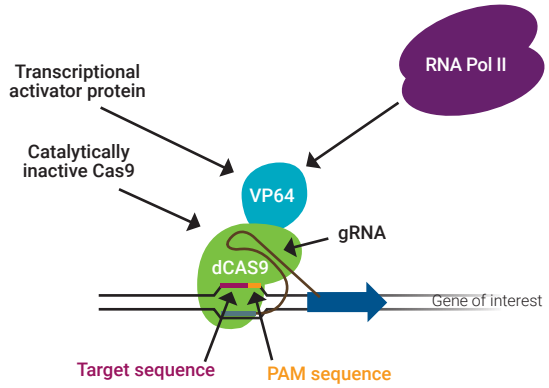
CRISPR activation (CRISPRa)

Synthetic transcription factors have enabled a number of important advances in biomedical and basic scientific research. CRISPR/Cas can be used to turn on expression of target genes by using an inactivated Cas9 fused with a non-specific transcription inducing domain. CRISPRa has been demonstrated to work on a genome-wide scale as a simple, versatile approach for RNA-guided gene activation.

CRISPR Transcriptional Interference



CRISPR Transcriptional Activation



CRISPRi Libraries		
	HUMAN	MOUSE
# of Genes	18,730	19,846
# of Guides	205,648 guides total	212,376 guides total

CRISPRa Libraries		
	HUMAN	MOUSE
# of Genes	18,574	19,949
# of Guides	201,530 guides total	208,066 guides total

Custom SureGuide CRISPR Libraries for CRISPR a/i

- Ready-to-Amplify libraries, up to ~70,000 guides per library
- Ready-to-Clone libraries, up to ~70,000 guides per library

CRISPR a/i libraries are designed with content from UCSF.

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Interested in working with CRISPR but need a more focused panel of genes? Prevalidated CRISPR a/i subsets with gene targets from UCSF relevant to disease related research are also available as preconfigured libraries.

CRISPR a/i Subsets	
• Kinases, Phosphatases, Drug Targets	• Mitochondria, Trafficking, Motility
• Cancer and Apoptosis	• Gene Expression
• Stress and Proteostasis	• Membrane Proteins

Human CRISPRi-v2		
Sublibrary	**Genes**	**Number of sgRNAs (non-targeting controls)**
Kinases, Phosphatases, Drug Targets	2319	26,008 (500)
Cancer and Apoptosis	2917	32,567 (560)
Stress and Proteostasis	3094	33,546 (580)
Mitochondria, Trafficking, Motility	2220	24,488 (500)
Gene Expression	2293	25,140 (500)
Membrane Proteins	2419	26,250 (500)
Unassigned*	3650	40,108 (650)
Genome-scale	18,730	205,648 (3790)

Human CRISPRa-v2		
Sublibrary	**Genes**	**Number of sgRNAs (non-targeting controls)**
Kinases, Phosphatases, Drug Targets	2321	25,988 (500)
Cancer and Apoptosis	2922	32,450 (560)
Stress and Proteostasis	3094	33,218 (580)
Mitochondria, Trafficking, Motility	2221	24,366 (500)
Gene Expression	2289	24,984 (500)
Membrane Proteins	2406	26,126 (500)
Unassigned*	3669	40,278 (650)
Genome-scale	18,574	201,530 (3790)

Mouse CRISPRi-v2		
Sublibrary	**Genes**	**Number of sgRNAs (non-targeting controls)**
Kinases, Phosphatases, Drug Targets	2270	24,673 (500)
Cancer and Apoptosis	2858	30,871 (560)
Stress and Proteostasis	2801	29,892 (580)
Mitochondria, Trafficking, Motility	2100	22,517 (500)
Gene Expression	1918	20,634 (500)
Membrane Proteins	2111	22,395(500)
Unassigned*	5948	63,428 (1200)
Genome-scale	19,846	212,376 (4340)

Mouse CRISPRa-v2		
Sublibrary	**Genes**	**Number of sgRNAs (non-targeting controls)**
Kinases, Phosphatases, Drug Targets	2586	24,594 (500)
Cancer and Apoptosis	2269	30,755 (560)
Stress and Proteostasis	2797	29,620 (580)
Mitochondria, Trafficking, Motility	2100	22,474 (500)
Gene Expression	1916	20,576 (500)
Membrane Proteins	2105	22,377 (500)
Unassigned*	5898	62,978 (1200)
Genome-scale	19,949	208,066 (4340)

* Available only as custom Ready-to-Amplify.

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