

# SygRNA<sup>®</sup> Synthetic gRNAs & Cas9 Proteins

CRISPR RNP Reagents Take Your Research Beyond the Bench

## Uncompromising Tools and Expertise for Genome Engineering

### Synthetic Guide RNA

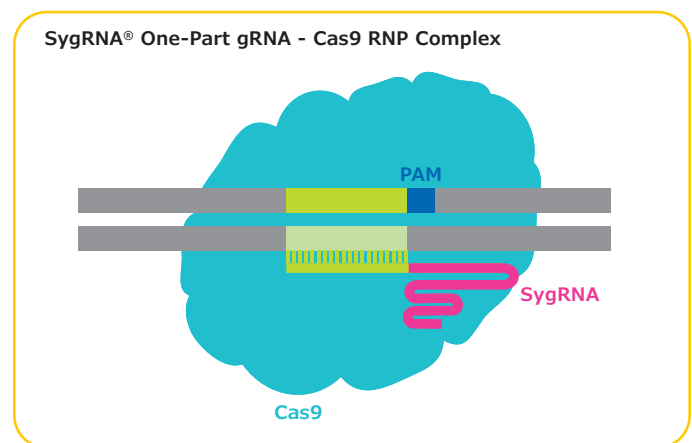
SygRNA<sup>®</sup> one-part sgRNA and two-part crRNA:tracrRNA systems accelerate genome editing with Cas9 protein, mRNA, or established Cas9 expressing cell lines. Our SygRNA<sup>®</sup> systems are compatible with a variety of delivery methods including microinjection, electroporation, and lipofection.

### Selected Applications

- Engineer transgenic animal models
- Model disease states in immortalized cells
- Create isogenic iPS cell lines

### Advantages

- Guaranteed - Assured cleavage efficacy with any gRNAs including your own designs
- Purified for unparalleled quality
- Fast delivery time – One-part SygRNAs are manufactured and shipped within 7-10 business days, two-part SygRNAs within 3-5 business days
- Easy-to-use – Compatible with your delivery protocols, including microinjection, electroporation or lipofection
- Customizable – Choose your format, quantity, purification and modification



gRNA format	Two-part system		One-part system
	SygRNA <sup>®</sup> crRNA:tracrRNA	SygRNA <sup>®</sup> modified* crRNA:tracrRNA	SygRNA <sup>®</sup> modified* sgRNA
Structure			
Cost	+	+	++
Efficiency	++	+++	++++

\*Chemically modified gRNAs contain stabilizing 2'-O-methyl and phosphorothioate linkages. Custom modifications available upon request.



# Cas9 Proteins

Our SygRNA® synthetic gRNAs are compatible with, and complemented by, the most expansive Cas9 protein portfolio available. With seven different protein options, as well as plasmid and RNA formats, you'll find exactly what you need for any gene editing application.

## Products

Product Description	Cat. No.
Wild-Type Cas9 Protein	CAS9PROT-50UG
	CAS9PROT-250UG
Enhanced Specificity Cas9 Protein	ESPCAS9PRO-50UG
	ESPCAS9PRO-250UG
dCas9-3X FLAG™-Biotin Protein	DCAS9PROT-50UG
	DCAS9PROT-250UG
<i>Francisella novicida</i> Cas9 Protein	FNCAS9PROT-50UG
	FNCAS9PROT-250UG
Cas9-D10A Nickase Protein	CAS9D10APR-50UG
	CAS9D10APR-250UG
<b>Cas9-GFP and Enhanced Specificity Cas9-GFP Proteins</b>	
Cas9-GFP Protein	CAS9GFPPRO-50UG
	CAS9GFPPRO-250UG
Enhanced Specificity Cas9-GFP Protein	ECAS9GFPPR-50UG
	ECAS9GFPPR-250UG

For more information, please visit [SigmaAldrich.com/CRISPRprotein](https://SigmaAldrich.com/CRISPRprotein)

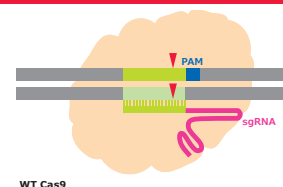
For synthetic gRNA products, visit [SigmaAldrich.com/SygRNA](https://SigmaAldrich.com/SygRNA)

For other CRISPR products visit: [SigmaAldrich.com/CRISPR](https://SigmaAldrich.com/CRISPR)

## CRISPR Cas9 Proteins

### Wild-Type SpCas9

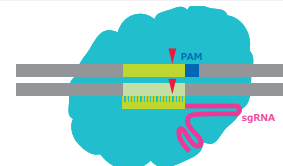
Original, wild-type Cas9; simple & economical; efficient in a broad range of gene editing applications



WT Cas9

### Enhanced Specificity eSpCas9

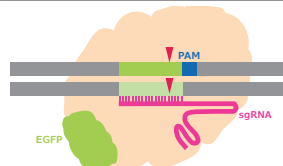
Cas9 variant with improved specificity ideal for experiments that require high accuracy.



eSpCas9

### SpCas9-EGFP Fusion

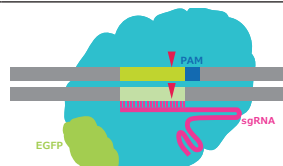
Original wild-type Cas9 fused to enhanced green fluorescent protein. Ideal for flow cytometry applications and visualization of transfected RNP complexes. Highly efficient. No decrease in activity compared to WT.



SpCas9-EGFP Fusion

### eSpCas9-EGFP Fusion

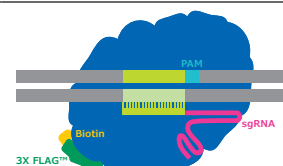
Cas9 variant with improved specificity fused to enhanced green fluorescent protein. Ideal for flow cytometry applications, fluorescence microscopy, and for experiments that require high accuracy.



eSpCas9-EGFP Fusion

### Dead SpCas9 3X FLAG™

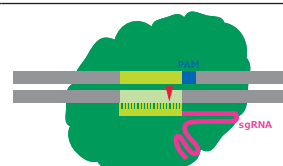
Catalytically inactive Cas9 protein ideal for DNA detection and isolation and is also a component of the proxy-CRISPR system. Used for CRISPR activation and inhibition applications.



dCas9

### SpCas9 D10A Nickase

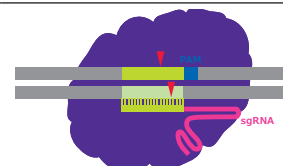
A 2-gRNA system with improved specificity and decreased off-target potential for specialized HDR genome editing applications.



CAS9D10A

### *Francisella novicida* Cas9

Type II-B Cas9 protein that cleaves target DNA in a staggered pattern and can be used as a programmable restriction enzyme. Works for cloning and sequence enrichment in cell-free environments.



FnCas9

Merck KGaA  
Frankfurter Strasse 250  
64293 Darmstadt, Germany

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