

Gene Snipper™ Cas9 Null NLS

CATALOG #: M1103-50 50 pmol (50 µl)
 M1103-250 250 pmol (25 µl)

SOURCE: Recombinant *Streptococcus pyogenes* Cas9 (CRISPR associated protein 9) Null NLS protein purified from *E. coli*

MOLECULAR WEIGHT: ~160 kDa

PURITY: The protein is at least 95% pure by SDS PAGE

CONCENTRATION: M1103-50 1000 nM
 M1103-250 10 µM

FORM: Colorless liquid. Enzyme supplied with 10X Reaction Buffer (200 mM HEPES, 50 mM MgCl₂, 1 M NaCl, 1 mM EDTA, pH 6.5)

COMPONENTS:

Product Name	M1103-50	M1103-250	Part No.
Cas9 Null NLS	1000 nM	10 µM	M1103-XX-1
10X Cas9 Reaction Buffer	1.25 ml	1.25 ml	M1103-XX-2

ENZYME STORAGE BUFFER: 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM DTT, 300 mM NaCl, and 50% (v/v) Glycerol.

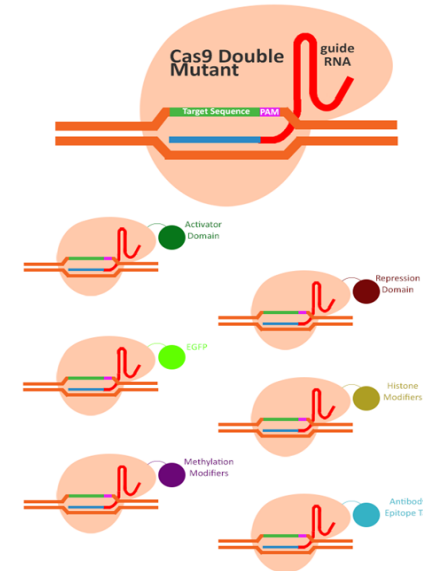
10X CAS9 REACTION BUFFER: 200 mM HEPES, 50 mM MgCl₂, 1 M NaCl, 1 mM EDTA, pH 6.5.

STORAGE CONDITIONS: Store all components at -20°C. Avoid repeated freeze/thaw cycles. All components are stable for 1 year from the date of shipping when stored and handled properly.

DESCRIPTION: The Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)/Cas9 system is the latest RNA-guided, endonuclease tool in genome editing which allows for very specific genomic disruption and replacement. The Cas9 Null Mutant NLS Protein (also referred to as Double Mutant) is created by mutating both cleavage domains of the wild type Cas9 (D10A and H840A) and adding a SV40 T antigen nuclear localization sequence (NLS) on the C-terminus of the protein. Such a Cas9 protein retains its ability to bind to genomic DNA through guide RNA (gRNA):genomic DNA base pairing. However, unlike Cas9 Nuclease and Cas9 Nickase, where permanent gene disruption can be achieved, the Cas9 Null Mutant does not introduce any genome modifications. Therefore, this protein can provide a useful negative control for CRISPR experiments. By fusing the Cas9 null mutant with other effector proteins, the CRISPR Cas9 system can expand its role to gene regulation, genome imaging, chromatin or DNA modifications, and chromatin

immunoprecipitation. In addition, binding of the Null Mutant can act as a roadblock to hinder transcription, thus offering a useful tool to achieve reversible knock-down of gene expression.

BIOLOGICAL ACTIVITY: The activity of the protein in *in vivo* is confirmed by CRISPR Genome Cleavage Detection Kit.



RELATED PRODUCTS:

- Gene Snipper™ Cas9 Protein (Cat. No. M1094-50, -250)
- Gene Snipper™ Cas9 NLS (Cat. No. M1095-50, -250)
- Gene Snipper™ Cas9 Nickase (D10A) (Cat. No. M1096-50, -250)
- Gene Snipper™ Cas9 (D10A) NLS (Cat. No. M1097-50, -250)
- Gene Snipper™ Cas9 Nickase (H840A) (Cat. No. M1098-50, -250)
- Gene Snipper™ Cas9 (H840A) NLS (Cat. No. M1099-50, -250)
- Gene Snipper™ Cas9 Null (Cat. No. M1100-50, -250)
- Gene Snipper™ Cas9 Null NLS (Cat. No. M1103-50, -250)
- Gene Snipper™ CRISPR Activity Kit (Cat. No. K1104-25)

FOR RESEARCH USE ONLY! Not to be used on humans.