# saCas9 Null Mutant NLS Protein

Store at -20 °C

| Cat. No. | Description | Concentration | Quantity |
|---|---|---|---|
| K047 | saCas9 Null Mutant NLS Protein | 1000 nM | 50 pmol (50 µl) |
| K147 | saCas9 Null Mutant NLS Protein | 10 µM | 250 pmol (25 µl) |

**Product 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 saCas9 Null Mutant Protein is created by mutating both cleavage domains of the wild type saCas9. Such a saCas9 protein retains its ability to bind to genomic DNA through gRNA:genomic DNA base pairing, however, the saCas9 Null Mutant does not introduce any genome modifications. Therefore, this protein can provide a useful negative control for CRISPR experiments. 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.

The Cas9 nuclease from the bacteria *Staphylococcus aureus*, abbreviated saCas9, is gaining popularity as an alternative to spCas9 due to its relatively smaller size. The saCas9 PAM sequence is 5'-NNGRRN (preferably 5'-NNGRRT). saCas9 NLS Null Mutant contains a SV40 T antigen nuclear localization sequence (NLS) on the C-terminus of the protein.

**Kit Components**

| Part No. | Product Components | 50 pmol |
|---|---|---|
| K047 | saCas9 Null Mutant NLS Protein | 50 µl |
| K000 | 10X Cas9 Reaction Buffer | 1.25 mL |
| **Part No.** | **Product Components** | **250 pmol** |
| K147 | saCas9 Null Mutant NLS Protein | 25 µl |
| K000 | 10X Cas9 Reaction Buffer | 1.25 mL |

**Product Source**
Recombinant *E. coli*.

**Storage Conditions**
Store all components at -20 °C. Avoid repeated freeze-thaw cycles of all components to retain maximum performance. All components are stable for 1 year from the date of shipping when stored and handled properly.

**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 Components**
200 mM HEPES, 50 mM $MgCl_2$, 1 M NaCl,1 mM EDTA, pH 6.5.

**Reaction Conditions**
Use 1X Cas9 Reaction Buffer and incubate at 37 °C.