

# SpCas9 Nuclease Instruction Manual

<b>Product Number</b>	SpCas9 Nuclease	<b>Product Number</b>	EDE0008
<b>Molecular Weight</b>	164.5 KDa	<b>Form</b>	Liquid

## I. Product Description

**Cas9 Nuclease (SpCas9)**, derived from the *S. pyogenes* strain, is an sgRNA-guided DNA endonuclease that cleaves double-stranded DNA. In the presence of a PAM (proto-spacer adjacent motif) sequence in the target DNA, Cas9 Nuclease can specifically cut the target double-stranded DNA under the guidance of sgRNA, creating blunt-end double-strand breaks. The PAM sequence is essential for Cas9 to recognize and cleave the target DNA, with the cleavage site located within the target sequence, 3 base pairs away from the PAM region. Cas9 Nuclease can also be applied in experiments such as in vitro target DNA cleavage and cloning of specific fragments.

## II. Product Information

### Product Components

Component	EDE0008-100	EDE0008-1000
SpCas9 Nuclease	1 $\mu$ M*100 $\mu$ L (100 pmol)	1 $\mu$ M*1mL (1000 pmol)
Buffer (5x)	100 $\mu$ L*1 tube	500 $\mu$ L*1 tube

### Storage Conditions and Shelf Life

The product is stable for 1 year when stored at -20°C. **For long-term storage, it is recommended to store at -80°C. It is advised to aliquot the product based on the frequency of use to avoid repeated freeze-thaw cycles.**

### Product Features

The product is prepared using a one-step purification process, retaining maximum enzymatic activity. It has been tested to show significantly higher activity compared to similar products.

## ▪ Quality Assurance

Sample Purity: ~95% (verified by SDS-PAGE).

## III. Test Reaction System

Component	Volume ( $\mu\text{L}$ )	Final Concentration
5 $\times$ Cleavage Buffer	4	1x
SpCas9 Nuclease (1 $\mu\text{M}$ )	5	250 nM
1000 nM sgRNA	0.5	250 nM
1 $\mu\text{M}$ DNA	0.5	25 nM
DEPC H <sub>2</sub> O	Add to 20 $\mu\text{L}$	-

### Reaction Conditions:

Incubate at 37°C for 30 minutes. The results can be analyzed via non-denaturing nucleic acid gel electrophoresis.

### Precautions

1. To prevent contamination by RNase, please keep the experimental area clean and tidy. Wear clean gloves and masks during operations. All consumables, such as pipette tips and centrifuge tubes, should be RNase-free.
2. SpCas9 enzymes are prone to inactivation; store the enzyme at -20°C immediately after use.

### Publishing Requirements

When using this product in publications, please acknowledge our company: Guangzhou Editgene Co. Ltd, China. Or EDITGENE CO.LTD if used within U.S. or Europe territory.