Product Analysis Certificate

PRODUCT	**Purified Cas9 protein (NLS-Cas9-NLS)**
CATALOG #	**CAS410A-1**
LOT #	**C21101911**
STORAGE	**-20°C (long term)**
SHELF LIFE	**12 months from date of receipt with proper storage**
SHIPPING	**Blue ice**

DESCRIPTION

NLS-Cas9-NLS nuclease is the recombinant Streptococcus pyogenes Cas9 (wt) protein with a nucleic localization signal (NLS) on both N and C terminal, which can be used for genome editing by inducing site-specific DNA double stranded breaks. Cas9 protein forms a very stable ribonucleoprotein (RNP) complex with the guide RNA (gRNA) component of the CRISPR/Cas9 system, which can localize to the nucleus immediately once entering the cell with the guide of the NLS. Compared with the mRNA or plasmid systems, transcription and translation processes are not required. This DNA-free system avoids the risk of inserting foreign DNA into the genome, which can be quite useful for gene editing-based disease therapy. Our highly pure and active Cas9 nuclease meets all of the researcher´s requirements (e.g. in vitro cleavage assay, RNP complex transfection, micro injection)

PRODUCT SOURCE

NLS-Cas9-NLS is produced by expression in an E. coli strain carrying a plasmid encoding the Cas9 gene from Streptococcus pyogenes with a double-ends nuclear localization signal (NLS).

KEY FEATURES:

DNA-free: no external DNA added to system.
High cleavage efficiency: Double NLS ensures the efficient entry of Cas9 protein into nuclei.
Low off target: transient expression of Cas9 nuclease.
Time-saving: no need for transcription and translation.

PACKAGE CONTENTS

Cat#	Description	Amount
CAS410A-1	Purified Cas9 protein (NLS-Cas9-NLS) (4 µg/µl)	**50 µg/vial**
10X Reaction Buffer	200 mM HEPES, 1 M NaCl, 50 mM MgCl2, 1 mM EDTA, pH 6.5 at 25°C	**500 µl**

Note: 1000 nM is equal to 160 ng/µl.

HANDLING GUIDELINES

- Store product at -20°C for long term

QC RESULTS

Test Items	Specifications	Results
Purity	>95%	Qualified
Qualified Bioactivity	>90% (in vitro) cleavage efficiencies	Qualified
DNase activity	No DNase activity	Qualified
RNase activity	No RNase activity	Qualified

DILUENT COMPATIBILITY

Diluent Buffer : 300 mM NaCl, 10 mM Tris-HCl, 0.1 mM EDTA, 1 mM DTT, 500 µg/ml BSA and 50% glycerol. (pH 7.4 at 25°C).

PROTOCOLS:

IN VITRO CLEAVAGE ASSAY:

1. Set up the reaction mixture as below. Add Cas9 protein and sgRNA the last for best activity.

Components	Amount
Cas9 protein	20 nM
sgRNA	40 nM
Target DNA	95 ng PCR product
	or 160 ng plasmid
10x reaction buffer	1 µl
Nuclease free water	Up to 20 µl

2. Incubate the reaction mixture at 37 °C for 1-2 hr.

3. Analyze on agarose gel.

VALIDATION DATA:

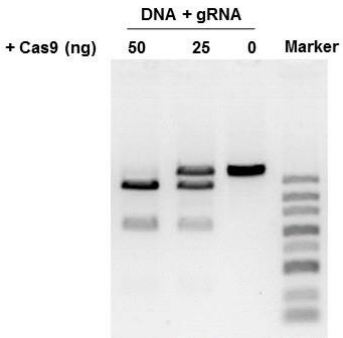

Fig 1.: In vitro DNA cleavage assay with SBI NLS-Cas9-NLS nuclease Reactions were set up according to recommended conditions, and cleavage products were resolved on a 1% agarose gel. Input DNA is EcoRV-linearized pUC57 plasmid DNA

Important Licensing Information

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