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NLS-Cas9(D10A)-2NLS Nickase

CAT# PR-137212B

Background	NLS-Cas9-D10A Nickase is a mutation form of Cas9 Nuclease. Cas9 nuclease is an RNA-guided endonuclease that can catalyze cleavage of double stranded DNA. This kind of targeted nuclease is a powerful tool for genome editing with high precision. Cas9 nuclease cleaves the double strand DNA generating two break sites based on its two active domains. NLS-Cas9-D10A Nickase is a mutation form of Cas9 Nuclease which makes one active domain deactivated, thus it can only cut one single strand DNA that is complementary to the guide- RNA, producing one single strand cut. Combined with two different gRNA, NLS-Cas9-D10A Nickase produces two cut sites respectively and causes a double strand break. Compared with the wild type Cas9 nuclease, the two- gRNA guided cleavage can significantly reduce the off target effects.
Application	Screening the highly efficient and specific targeting gRNAs using in vitro DNA cleavage. In vivo gene editing combined with specific gRNA by electroporation or injection.
Source	E.coli
Concentration	40 ug/ 40 ul, 250 pmol
Stability	Store at 4°C if entire vial will be used within 1-2 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.
Purity	Greater than 90% as determined by SDS-PAGE.
Physical form	Clear colorless solution
Storage	-20°C. Avoid freeze thaw cycles.
Storage Buffer	10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM DTT, 300 mM NaCl, and 50% (v/v) Glycerol.

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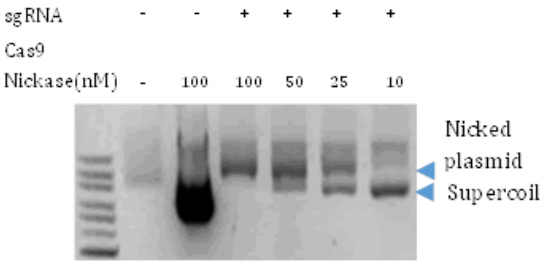
sgRNA - - + + + +
Cas9
Nickase(nM) - 100 100 50 25 10
Nicked
plasmid
Supercoil