

# Biotinylated NLS-dCas9-NLS protein

Cat# PR-137213bio

<b>Background</b>	<p>The functions of CRISPR and CRISPR-associated (Cas) genes are essential in adaptive immunity in some bacteria and archaea. CRISPR uses a Cas9 protein to recognize DNA sequences, with target specificity solely determined by a small guide (sg) RNA and a protospacer adjacent motif (PAM). Upon binding to target DNA, the Cas9-sgRNA complex generates a DNA double-stranded break. Based on this RNA- guided nuclease activity, CRISPR has been showed to be a powerful tool in editing the genomes of a broad range of organisms. Furthermore, a repurposed, nuclease-deactivated Cas9 (dCas9) protein has been used to regulate endogenous gene expression and labeling of genomic loci in living and fixed cells. Biotinylated dCas9 was prepared by in vitro biotinylation with biotin to dCas9 at 1 to 3:1 ratio.</p>
<b>Size</b>	50 µg
<b>Concentration</b>	1 µg/µl
<b>Source</b>	<i>E. coli</i>
<b>Sequence</b>	<p>Mutated CRISPR-associated endonuclease Cas9 (amino acids 1 to 1368) with D10A &amp; H840A (ACCESSION: AKS40378 for Cas9).</p>
<b>Appearance</b>	Sterile filtered colorless solution.
<b>Formulation</b>	<p>Recombinant dCas9 (D10A &amp; H840A) protein expressed in <i>E. coli</i> supplied in a buffer of 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM DTT, 300 mM NaCl, and 50% (v/v) Glycerol.</p>
<b>Storage and Stability</b>	<p>Recombinant dCas9 (D10A &amp; H840A) protein in solution is temperature sensitive and must be stored at -20°C or below to prevent degradation. Avoid repeated freeze /thaw cycles and keep on ice when not in storage. Stable for 1 year from the date of shipping when stored and handled properly.</p>

**Application**

Recombinant dCas9 (D10A & H840A) protein is suitable for use in imaging of genomic loci in living cells and fixed cells as well as for gene expression regulation.