Recombinant dCas9 protein, His/AM Tag

Catalog No: 81068, 81768
Lot No: 30117001
Expressed In: *E. coli*

Quantity: 100, 1000 µg
Concentration: 1 µg/µl
Source: S. pyogenes

Buffer Contents: Recombinant dCas9 protein, His/AM tag is supplied in 25mM Tris-HCl pH 8.0, 300 mM NaCl, 10% glycerol and 0.5 mM TCEP.

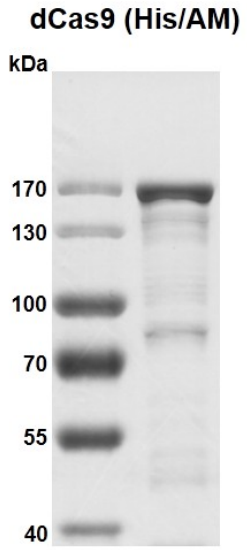
Background: dCas9 (deficient Cas9) protein is an endonuclease-inactive version of Cas9 (CRISPR associated protein 9). Cas9 is an RNA-guided DNA endonuclease associated with adaptive immunity system in *Streptococcus pyogenes*, among other bacteria. Cas9 can unwind foreign DNA and checking for sites complementary to the 20 basepair spacer region of the guide RNA. If the DNA substrate is complementary to the guide RNA, Cas9 cleaves the invading DNA. In this sense, the CRISPR-Cas9 mechanism has a number of parallels with the RNA interference (RNAi) mechanism in eukaryotes.

dCas9 lacks endonuclease activity so that it binds but does not cleave cognate DNA, which can be used to localize transcriptional activators or repressors to specific DNA sequences in order to control transcription. While native Cas9 requires a guide RNA composed of two disparate RNAs that associate to make the guide – the CRISPR RNA (crRNA), and the trans-activating RNA (tracrRNA), dCas9 targeting has been simplified through the engineering of a chimeric single guide RNA (chiRNA).

Protein Details: Recombinant dCas9 protein, His/AM tag was expressed in *E. coli* as the full length protein (accession number WP_010922251.1) with two point mutations (Glutamic acid to Alanine at amino acid 10 and Histidine to Alanine at amino acid 840). The protein has an N-terminal 6×His tag and a C-terminal nuclear localization sequence then two copies of AM tag. The molecular weight of the protein is 166 kDa.

Application Notes: This protein is useful for the study of DNA binding, transcriptional activation / repression as well as other genome engineering.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



Recombinant dCas9 protein, His/AM Tag
7.5% SDS-PAGE gel stained with Coomassie Blue
MW: 166 kDa
Purity: > 80%