Recombinant SARS-CoV-2 NSP16 protein

Catalog No: 81318, 81618
Expressed In: *E. coli*

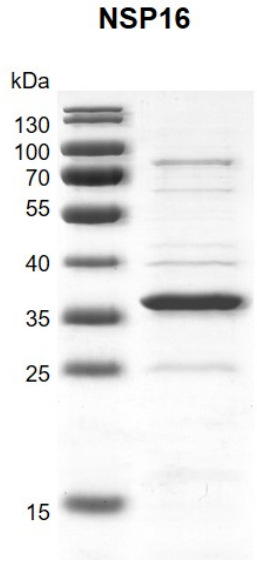
Quantity: 50, 1000 µg
Concentration: 0.4 µg/µl
Source: SARS-CoV-2

Buffer Contents: Recombinant SARS-CoV-2 NSP16 protein is supplied in 25 mM Tris-HCl pH 8.0, 300 mM NaCl, 10% glycerol and 0.5 mM TCEP.

Background: SARS-CoV-2 NSP16 (Nonstructural Protein 16), also called as ribose 2′-O-methyltransferase, is one of the nonstructural proteins encoded by SARS-CoV-2 orf1ab. The polyproteins of CoVs are cleaved by virus-encoded cysteine proteinases comprise papain- and chymotrypsin-like proteases into 16 nonstructural proteins including the expression of NSP1 to NSP11 by orf1a and encoding NSP12 to NSP16 by orf1b. According to BLAST analysis, the sequence identity of ORF1ab protein between SARS-CoV-2 and SARS-CoV is more than 90% with the query cover of about 100%, while the sequence identity of NSP16 between these two viruses is about 93.24%.

The 5′-cap structure is a distinct feature of eukaryotic mRNAs, and eukaryotic viruses generally modify the 5′-end of viral RNAs to mimic cellular mRNA structure, which is important for RNA stability, protein translation and viral immune escape. SARS coronavirus (SARS-CoV) encodes two S-adenosyl-L-methionine (SAM)-dependent methyltransferases (MTase) which sequentially methylate the RNA cap at guanosine-N7 and ribose 2′-O positions, catalyzed by NSP14 N7-MTase and NSP16 2′-O-MTase, respectively. A unique feature for SARS-CoV is that NSP16 requires non-structural protein NSP10 as a stimulatory factor to execute its MTase activity. Similarly, SARS-CoV-2 NSP16 is estimated to be a methyltransferase to methylate the RNA cap when complexed with NSP10.

Protein Details: Recombinant SARS-CoV-2 NSP16 protein was expressed in *E.coli* cells as the full length protein (accession number YP_009725311.1) with a C-terminal 6×His tag. The predicted molecular weight of the protein is 34.5 kDa.



Recombinant SARS-CoV-2 NSP16 protein gel
12.5% SDS-PAGE with Coomassie blue staining

MW: 34.5 kDa

Purity: >88%

Application Notes: Recombinant SARS-CoV-2 NSP16 protein is suitable for use in the study of SARS-CoV-2. Where possible, Active Motif has developed functional or activity assays for recombinant proteins. Additional characterization such as enzyme kinetic activity assays, inhibitor screening or other biological activity assays may not have been performed for every product. All available data for this product is shown.

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 guaranteed for 6 months from date of arrival.