

HCV-1a NS3 protease/helicase immunodominant region Protein (GST)

General Information

Synonyms:	NS3
Protein Construction:	A DNA sequence encoding the Hepatitis C virus (HCV)(serotype 1a, isolate H77) NS3 (NP_803144.1) (Thr330-Thr433) was expressed with a GST tag at the N-terminus. Predicted N terminal: Met
Species:	HCV
Expression Host:	E. coli
Accession:	NP_803144.1
Molecular Weight:	37.9 kDa (predicted)
AA Sequence:	t vshpnieeva lsttgeipfy gkaiplevik ggrhlifchs kkkcdelaak lvalginava yyrghdvsvi ptsgdvvvvs tdaImtghtg dfdsvidcnt cvt

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE.
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing 50 mM Tris, 500 mM NaCl. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

HCV NS3 displays three enzymatic activities: serine protease, NTPase, and RNA helicase. HCV NS3 serine protease, in association with NS4A, is responsible for the cleavages of NS3-NS4A, NS4A-NS4B, NS4B-NS5A, and NS5A-NS5B.

HCV NS3 RNA helicase binds to RNA and unwinds dsRNA in the 3' to 5' direction, and likely RNA stable secondary structure in the template strand (By similarity). Cleaves and inhibits the host antiviral protein MAVS. NS3/NS4A complex also prevents phosphorylation of human IRF3, thus preventing the establishment of dsRNA induced antiviral state. One of the HCV proteases, NS3-4A serine protease, is a non-covalent heterodimer consisting of a catalytic subunit (the N-terminal one-third of NS3 protein) and an activating cofactor (NS4A protein) and is responsible for cleavage at four sites of the HCV polyprotein.

Reference

Pomerantz J.L., et al., (1999), NF- κ B activation by a signaling complex containing TRAF2, TANK, and TBK1, a novel IKK-related kinase. EMBO J. 18:6694-6704.

Tojima Y., et al., (2000), NAK is an IkappaB kinase-activating kinase. Nature 404:778-782.

Ota T., et al., (2004), Complete sequencing and characterization of 21,243 full-length human cDNAs. Nat. Genet. 36: 40-45.

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