

Product Data Sheet

Cat # HNS55-R Recombinant (E. coli) Hepatitis C Virus (HCV) NS5 protein, fragment, (soluble) **Size:** 100 ug

HCV is a small 50nm, enveloped, single-stranded, positive sense RNA virus in the family Flaviviridae. HCV has a high rate of replication with approximately one trillion particles produced each day in an infected individual. Due to lack of proofreading by the HCV RNA polymerase, the HCV has an exceptionally high mutation rate, a factor that may help it elude the host's immune response. Hepatitis C virus is classified into six genotypes (1-6) with several subtypes within each genotype. The preponderance and distribution of HCV genotypes varies globally. Genotype is clinically important in determining potential response to interferon-based therapy and the required duration of such therapy. Genotypes 1 and 4 are less responsive to interferon-based treatment than are the other genotypes (2, 3, 5 and 6).

Once inside the hepatocyte, HCV takes over portions of the intracellular machinery to replicate. The HCV genome is translated to produce a single protein of around 3011 amino acids. The polyprotein is then proteolytically processed by viral and cellular proteases to produce three structural (virion-associated) and seven nonstructural (NS) proteins. Alternatively, a frameshift may occur in the Core region to produce an Alternate Reading Frame Protein (ARFP). HCV encodes two proteases, the NS2 cysteine autoprotease and the NS3-4A serine protease. The NS proteins then recruit the viral genome into an RNA replication complex, which is associated with rearranged cytoplasmic membranes. RNA replication takes place via the viral RNA-dependent RNA polymerase NS5B, which produces a negative-strand RNA intermediate. The negative strand RNA then serves as a template for the production of new positive-strand viral genomes. Nascent genomes can then be translated, further replicated, or packaged within new virus particles. New virus particles are thought to bud into the secretory pathway and are released at the cell surface.

Structural proteins made by the hepatitis C virus include E1 and E2; nonstructural proteins include NS2, NS3, NS4, NS4A, NS4B, NS5, NS5A, and NS5B.

DESCRIPTION:

The E.coli derived recombinant protein (>95% pure) contains the fragments of the NS5 immunodominant regions. Immunoreactive with sera of HCV-infected individuals. It is supplied in a buffer, 50mM Tris, pH-8 and 5mM EDTA (see lot sp concn on the vial) or lyophilized in the same buffer. Reconstitute powder in water to a desired concn. Protein is shipped at ambient temperature. Upon arrival, store at -20°C. It is stable for at least 13 months if kept frozen. One month in solution at room temperature.

SPECIFICITY:

Immunoreactive with sera of HCV-infected individuals

References: Kato N (200) Microb. Comp. Genomics 5 (3): 129-51; Dubuisson J (2007) World J. Gastroenterol. 13 (17): 2406-15; Lindenbach B (2005) Nature 436, 933-938;

HNS55-R

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