

Recombinant Hepatitis C Virus Core Antigen, His-tagged

Cat. No. HEP-244 **Lot. No.** (See product label)

SPECIFICATION

Product Overview Hepatitis C Virus core antigen (HCcAg) recombinant protein. This core protein fragment represents part of the infectious virions inner core particle, which encloses the viral genome.

Tag His

Background

Hepatitis C virus (HCV) is a small 50nm, enveloped, single-stranded, positive sense RNA virus in the family Flaviviridae. It is the cause of hepatitis C and some cancers such as liver cancer (hepatocellular carcinoma) and lymphomas in humans. HCV has a high rate of replication, producing approximately one trillion particles/day in an infected individual, as well as an exceptionally high mutation rate, which may help it evade the host's immune response. The virus is classified into six genotypes (1-6) with several subtypes within each genotype. The preponderance and distribution of HCV genotypes varies globally and this is clinically important in determining potential response to interferon-based therapy and the required duration of such therapy. For example, genotypes 1 and 4 are less responsive to interferon-based treatment than genotypes 2, 3, 5 and 6.

The virus capsid is formed by polymerization of the HCV core protein, a structural protein encoded by the 5' end of the HCV open reading frame (amino acids 1–191). After translation, host signal peptidases cleave the HCV core protein antigen (HCcAg) from the precursor polyprotein and remove the signal peptide located at its C-terminus. HCcAg is antigenic, interacts with numerous cellular proteins, induces specific cellular and humoral responses, and through various pathways likely plays an important role in the pathogenesis of HCV infection.

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The core antigen is a promising marker for the diagnosis of infection in humans. Its primary sequence is the most conserved sequence among the HCV proteins, making it the most versatile protein marker for HCV infection (Hadziyannis et al., 2013). Enzyme-linked immunosorbent assay (ELISA)-based HCcAg detection is widely employed in clinical practice as an auxiliary method in the diagnosis of HCV infection (Ross, 2010). Notably, HCcAg is present in blood 10 to 15 days after infection, which appears only 3 to 5 days later than HCV RNA (Buket et al., 2014; Soliman et al., 2015). Therefore, HCcAg is a useful marker for the early diagnosis of HCV infection.

Purity	~95% by SDS-PAG
Formulation	PBS pH7.4
Applications	Suitable for use in ELISA, western blot, lateral flow immunoassay.
Storage	Aliquot & freeze (≤ -20 centigrade), Avoid multiple freeze/thaw cycles
Notes	This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.
Type	Recombinant
ClassID 1	Infectious Disease
GENE INFORMATION	
Synonyms	HCcAg