

Anti-Hepatitis C Virus (HCV) NS4a protein antibody, monoclonal (S4-13)

65-056 20 µg, 65-057 100 µg

Hepatitis C virus (HCV) is a small (55-65 nm in size), enveloped, positive sense single-stranded RNA virus in the family *Flaviviridae* and the principal cause of parenteral non-A, non-B hepatitis. The virus genome consists of a single open reading frame of approximately 9,400 bases which encodes a single polyprotein of about 3,010 amino acids (1, 2, 3). The polyprotein is processed by host cell and viral proteases into four structural proteins (core, envelope 1 and 2, and p7) and six non-structural proteins (NS2, 3, 4a, 4b, 5a, and 5b) necessary for viral replication. NS3 serine proteinase is responsible for proteolytic processing of other non-structural proteins. **NS4a protein** (54 amino acids) forms a complex with NS3 and functions as a cofactor for NS3 protease activity.

Applications

1. Western blotting
2. Immunofluorescence staining
3. ELISA

Other applications have not been tested.

Immunogen: A region of NS4 protein (the nucleotide sequence is shown in ref.4) of **HCV genotype 1b** expressed in *E.coli*. The epitope of this antibody was mapped to the N-terminal region of the NS4 protein (**NS4a**).

Isotype: Mouse IgG2b kappa

Form: Purified monoclonal antibody (IgG) 1mg/ml in PBS, 50% glycerol, filter-sterilized

Specificity: Specific to human HCV NS4a protein.

Storage: -20

Data Link: Swiss-Prot [HCV protein](#)

References: This antibody is produced and used in ref.4.

1. Brass V, Moradpour D, Blum HE. Molecular Virology of Hepatitis C Virus (HCV): 2006 Update. *Int J Med Sci* 2006; 3:29-34. [PMID: 16614739](#)
2. Kato, N. *et al.* (1990) "Molecular cloning of the human hepatitis C virus genome from Japanese patients with non-A, non-B hepatitis." *Proc. Natl. Acad. Sci. USA* **87**, 9524-9528 [PMID: 2175903](#)
3. Takamizawa, A. *et al.* (1991) "Structure and organization of the hepatitis C virus genome isolated from human carriers." *J. Virol.* **65**, 1105-1113 [PMID: 1847440](#)
4. Manabe, S. *et al.* (1994) "Production of nonstructural proteins of hepatitis C virus requires a putative viral protease encoded by N3." *Virology* **198**, 636-644 [PMID: 8291245](#)

Related products: 1. #65-051 anti-HCV Core antibody

2. #65-066 anti-HCV NS5b antibody

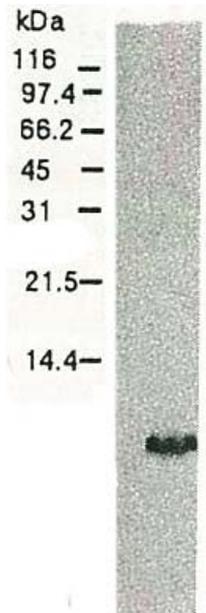


Fig.1 Western blotting of HCV NS4A protein. Chimp liver cells were infected with recombinant vaccinia virus containing a HCV genome cDNA and were subjected to Western blotting using anti-NS4a antibody. The protein detected with this antibody is 6 kD. This small NS4 protein (NS4a) was produced from the N-terminal region of the NS4 protein.



Fig.2 Detection of HCV NS4a protein by immunofluorescence antibody staining. Chimp liver cells were infected with recombinant vaccinia virus containing a HCV genome cDNA. After incubation for 48 hr, the cells were fixed with acetone and HCV NS4a protein was detected by indirect immunofluorescence staining using this antibody.