SANTA CRUZ BIOTECHNOLOGY, INC.

Hep C NS3 (1828): sc-69938



BACKGROUND

The Hep C (Hepatitis C) is a small, enveloped, single-stranded, positive sense RNA virus belonging to the family *Flaviviridae*. Transmission of the virus occurs when blood from an infected individual enters the body of an uninfected individual. Hep C primarily replicates within hepatocytes in the liver, and circulating Hep C particles bind to receptors on the surface and enter these cells. Hep C replicates quickly, producing approximately one trillion particles each day in infected individuals. Hep C RNA polymerase has no proofreading function, so the virus has an exceptionally high mutation rate which may help it elude the host's immune system. Hep C infection results in chronic infections, liver cirrhosis, and hepatocellular carcinoma in most people. Hep C NS3 (nonstructural protein 3) has both protease and helicase activity and is essential for Hep C replication and proliferation.

REFERENCES

- Watashi, K. and Shimotohno, K. 2003. The roles of hepatitis C virus proteins in a novel action mechanism of the HCV core protein on gene regulation by nuclear hormone receptors. Cancer Sci. 94: 937-943.
- 2. Umehara, T., et al. 2004. Designing and analysis of a potent bi-functional aptamers that inhibit protease and helicase activities of HCV NS3. Nucleic Acids Symp. Ser. 48: 195-196.
- Acosta-Rivero, N., et al. 2004. Nucleic acid binding properties and intermediates of HCV core protein multimerization in *Pichia pastoris*. Biochem. Biophys. Res. Commun. 323: 926-931.
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- 5. Alisi, A., et al. 2005. Thr 446 phosphorylation of PKR by HCV core protein deregulates G₂/M phase HCC cells. J. Cell. Physiol. 205: 25-31.
- Carabaich, A., et al. 2005. Profiles of HCV core protein and viremia in chronic hepatitis C: possible protective role of core antigen in liver damage. J. Med. Virol. 76: 55-60.
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- Kimball, P., et al. 2005. HCV core protein augments cyclosporine immunosuppression. Transplant. Proc. 37: 652-653.
- 9. Alvarez-Lajonchere, L., et al. 2006. Hepatitis C virus (HCV) core protein enhances the immunogenicity of a co-delivered DNA vaccine encoding HCV structural antigens in mice. Biotechnol. Appl. Biochem. 44: 9-17.

SOURCE

Hep C NS3 (1828) is a mouse monoclonal antibody raised against purified recombinant Hep C NS3.

PRODUCT

Each vial contains 100 μg lgG_1 in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.1% stabilizer protein.

APPLICATIONS

Hep C NS3 (1828) is recommended for detection of NS3 genotypes 1a, 2a and 2c of Hep C origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of HCV NS3: 70 kDa.

SELECT PRODUCT CITATIONS

- 1. Ghosh, S., et al. 2011. Association of filamin A and vimentin with hepatitis C virus proteins in infected human hepatocytes. J. Viral Hepat. 18: e568-77.
- 2. Sabri, S., et al. 2014. Studies on the role of NS3 and NS5A non-structural genes of hepatitis C virus genotype 3a local isolates in apoptosis. Int. J. Infect. Dis. 25: 38-44.
- Sa-Ngiamsuntorn, K., et al. 2016. A robust model of natural hepatitis C infection using hepatocyte-like cells derived from human induced pluripotent stem cells as a long-term host. Virol. J. 13: 59.
- 4. Kim, K., et al. 2020. A small molecule, 4-phenylbutyric acid, suppresses HCV replication via epigenetically induced hepatic hepcidin. Int. J. Mol. Sci. 21: 5516.
- Jeong, S., et al. 2021. 2-0-methylhonokiol suppresses HCV replication via TRAF6-mediated NFκB activation. Int. J. Mol. Sci. 22: 6499.
- Yoon, H., et al. 2022. Hepatitis B virus X protein stimulates hepatitis C virus (HCV) replication by protecting HCV core protein from E6AP-mediated proteasomal degradation. Microbiol. Spectr. E-published.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.