SANTA CRUZ BIOTECHNOLOGY, INC.

HNF-1α (2): sc-135939

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HNF-1 (α and β), HNF-3 (α, β and γ), HNF-4 (α and γ), and HNF-6 compose, in part, a homoeprotein family designated the hepatocyte nuclear factor family. The various HNF-1 isoforms regulate transcription of genes in the liver as well as in other tissues such as kidney, small intestine and thymus. HNF-3α, HNF-3β and HNF-3γ regulate the transcription of numerous hepatocyte genes in adult liver. HNF-3α and HNF-3β have also been shown to be involved in gastrulation events such as body axis formation. HNF-4α and HNF-4γ have been shown to be important for early embryo development. HNF-4α is expressed in liver, kidney, pancreas, small intestine, testis and colon; and HNF-4γ is expressed in each of these tissues except liver. HNF-6 has been shown to bind to the promoter of HNF-3β, which indicates a potential role of HNF-6 in gut endoderm epithelial cell differentiation. Evidence suggests that HNF-6 may also be a transriptional activator for at least 22 other hepatocyte-enriched genes, including cytochrome P450 2C13 and α-1 antitrypsin.

REFERENCES

1. Bach, I., et al. 1993. More potent transcriptional activators or a transdominant inhibitor of the HNF-1 homeoprotein family are generated by alternative RNA processing. EMBO J. 12: 4229-4242.
2. Kaestner, K.H., et al. 1994. The HNF-3 gene family of transcription factors in mice: gene structure, cDNA sequence, and mRNA distribution. Genomics 20: 377-385.

CHROMOSOMAL LOCATION

Genetic locus: HNF1A (human) mapping to 12q24.31; Hnf1a (mouse) mapping to 5 F.

SOURCE

HNF-1α (2) is a mouse monoclonal antibody raised against amino acids 70-269 of HNF-1α of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HNF-1α (2) is recommended for detection of HNF-1α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for HNF-1α siRNA (h): sc-35567, HNF-1α siRNA (m): sc-35568, HNF-1α shRNA Plasmid (h): sc-35567-SH, HNF-1α shRNA Plasmid (m): sc-35568-SH, HNF-1α shRNA (h) Lentiviral Particles: sc-35567-V and HNF-1α shRNA (m) Lentiviral Particles: sc-35568-V.

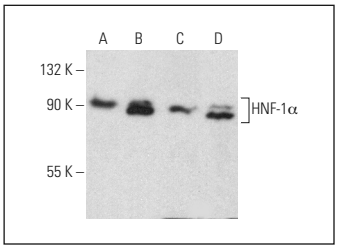
Molecular Weight of HNF-1α: 79 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262, Hep G2 cell lysate: sc-2227 or c4 whole cell lysate: sc-364186.

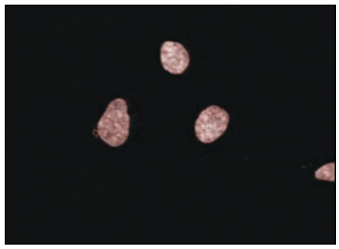
STORAGE

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

DATA



HNF-1α (2): sc-135939. Western blot analysis of HNF-1α expression in Hep G2 (**A**), Caco-2 (**B**), OVCAR-3 (**C**) and c4 (**D**) whole cell lysates.



HNF-1α (2): sc-135939. Immunofluorescence staining of human endothelial cells showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Pettinato, G., et al. 2016. Scalable differentiation of human iPSCs in a multicellular spheroid-based 3D culture into hepatocyte-like cells through direct Wnt/β-catenin pathway inhibition. Sci. Rep. 6: 32888.
2. Yu, L., et al. 2017. SRT1720 alleviates ANIT-induced cholestasis in a mouse model. Front. Pharmacol. 8: 256.
3. Mirza, A.N., et al. 2019. LAP2 proteins chaperone GLI1 movement between the lamina and chromatin to regulate transcription. Cell 176: 198-212.e15.
4. Pettinato, G., et al. 2019. Generation of fully functional hepatocyte-like organoids from human induced pluripotent stem cells mixed with endothelial cells. Sci. Rep. 9: 8920.
5. Zou, N., et al. 2021. Elevated HNF1A expression promotes radiation-resistance via driving PI3K/AKT signaling pathway in esophageal squamous cell carcinoma cells. J. Cancer 12: 5013-5024.
6. Tomaz, R.A., et al. 2022. Generation of functional hepatocytes by forward programming with nuclear receptors. Elife 11: e71591.

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.

CONJUGATES

See **HNF-1α (F-7): sc-393925** for HNF-1α antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.