

HNF-4 α (295-465): sc-4283 WB

BACKGROUND

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

REFERENCES

1. Bach, I. and Yaniv, M. 1993. More potent transcriptional activators or a transdominant inhibitor of the HNF1 homeoprotein family are generated by alternative RNA processing. *EMBO J.* 12: 4229-4242.
2. Kaestner, K.H., Hiemisch, H., Luckow, B. and Schutz, G. 1994. The HNF-3 gene family of transcription factors in mice: gene structure, cDNA sequence, and mRNA distribution. *Genomics* 20: 377-385.
3. Drewes, T., Senkel, S., Holewa, B. and Ryffel, G.U. 1996. Human hepatocyte nuclear factor 4 isoforms are encoded by distinct and differentially expressed genes. *Mol. Cell. Biol.* 16: 925-931.
4. Samadani, U. and Costa, R.H. 1996. The transcriptional activator hepatocyte nuclear factor 6 regulates liver gene expression. *Mol. Cell Biol.* 16: 6273-6284.
5. Chen, Y., Kissling, G., Negishi, M. and Goldstein, J.A. 2005. The nuclear receptors constitutive androstane receptor and pregnane X receptor cross-talk with HNF-4 α to synergistically activate the human CYP2C9 promoter. *J. Pharmacol. Exp. Ther.* 314: 1125-1133.
6. Hertz, R., Kalderon, B., Byk, T., Berman, I., Za'tara, G., Mayer, R., Bar-Tana, J. 2005. Thioesterase activity and acyl-CoA/fatty acid cross-talk of HNF-4 α . *J. Biol. Chem.* 280: 24451-24461.
7. Pearson, E.R., Pruhova, S., Tack, C.J., Johansen, A., Castleden, H.A., Lumb, P.J., Wierzbicki, A.S., Clark, P.M., Lebl, J., Pedersen, O., Ellard, S., Hansen, T. and Hattersley, A.T. 2005. Molecular genetics and phenotypic characteristics of MODY caused by hepatocyte HNF-4 α mutations in a large European collection. *Diabetologia* 48: 878-885.

SOURCE

HNF-4 α (295-465) is expressed in *E. coli* as a 46 kDa tagged fusion protein corresponding to amino acids 295-465 mapping at the carboxy terminus of HNF-4 α of human origin.

PRODUCT

HNF-4 α (295-465) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 μ g in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

HNF-4 α (295-465) is suitable as a Western blotting control for sc-6556, sc-6557 and sc-8987.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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