

# HNF-4 $\alpha$ (Q-15): sc-101059

## BACKGROUND

HNF-1 ( $\alpha$  and  $\beta$ ), HNF-3 ( $\alpha$ ,  $\beta$  and  $\gamma$ ), HNF-4 ( $\alpha$  and  $\gamma$ ) 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 $\alpha$ , HNF-3 $\beta$  and HNF-3 $\gamma$  regulate the transcription of numerous hepatocyte genes in adult liver. HNF-3 $\alpha$  and HNF-3 $\beta$  have also been shown to be involved in gastrulation events such as body axis formation. HNF-4 $\alpha$  and HNF-4 $\gamma$  have been shown to be important for early embryo development. HNF-4 $\alpha$  is expressed in liver, kidney, pancreas, small intestine, testis and colon; HNF-4 $\gamma$  is expressed in each of these tissues except liver. HNF-6 has been shown to bind to the promoter of HNF-3 $\beta$ , 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  $\alpha$ -1 antitrypsin.

## REFERENCES

- Bach, I., et al. 1993. More potent transcriptional activators or a transcriptional inhibitor of the HNF1 homeoprotein family are generated by alternative RNA processing. *EMBO J.* 12: 4229-4242.
- 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.
- Drewes, T., et al. 1996. Human hepatocyte nuclear factor 4 isoforms are encoded by distinct and differentially expressed genes. *Mol. Cell. Biol.* 16: 925-931.
- Samadani, U., et al. 1996. The transcriptional activator hepatocyte nuclear factor 6 regulates liver gene expression. *Mol. Cell. Biol.* 16: 6273-6284.
- Kojima, K. et al. 2006. The expression of hepatocyte nuclear factor-4 $\alpha$ , a developmental regulator of visceral endoderm, correlates with the intestinal phenotype of gastric adenocarcinomas. *Pathology* 38: 548-554.
- Gupta, R.K. et al. 2007. Expansion of adult  $\beta$ -cell mass in response to increased metabolic demand is dependent on HNF-4 $\alpha$ . *Genes Dev.* 21: 756-769.

## CHROMOSOMAL LOCATION

Genetic locus: HNF4A (human) mapping to 20q13.12; Hnf4a (mouse) mapping to 2 H3.

## SOURCE

HNF-4 $\alpha$  (Q-15) is a mouse monoclonal antibody raised against recombinant HNF-4 $\alpha$  of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>2a</sub> kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

HNF-4 $\alpha$  (Q-15) is recommended for detection of HNF-4 $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HNF-4 $\alpha$  siRNA (h): sc-35573, HNF-4 $\alpha$  siRNA (m): sc-35574, HNF-4 $\alpha$  shRNA Plasmid (h): sc-35573-SH, HNF-4 $\alpha$  shRNA Plasmid (m): sc-35574-SH, HNF-4 $\alpha$  shRNA (h) Lentiviral Particles: sc-35573-V and HNF-4 $\alpha$  shRNA (m) Lentiviral Particles: sc-35574-V.

Molecular Weight of full-length HNF-4 $\alpha$ : 54 kDa.

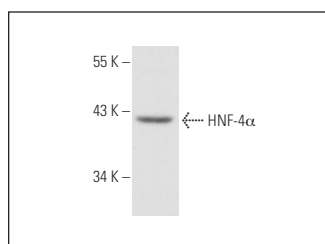
Molecular Weight of N-terminal truncated HNF-4 $\alpha$ : 40 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

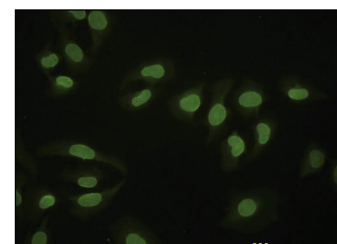
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



HNF-4 $\alpha$  (Q-15): sc-101059. Western blot analysis of HNF-4 $\alpha$  expression in Hep G2 whole cell lysate.



HNF-4 $\alpha$  (Q-15): sc-101059. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Felder, T.K., et al. 2011. Characterization of novel peroxisome proliferator-activated receptor  $\gamma$  coactivator-1 $\alpha$  (PGC-1 $\alpha$ ) isoform in human liver. *J. Biol. Chem.* 286: 42923-42936.
- Wang, G., et al. 2018. Co-culture system of hepatocytes and endothelial cells: two *in vitro* approaches for enhancing liver-specific functions of hepatocytes. *Cytotechnology* 70: 1279-1290.

## STORAGE

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