

LRH-1

Liver Receptor Homologue-1, Nuclear Receptor Subfamily 5, Group A, Member 2; NR5A2
human, recombinant, insect cells

Cat. No.	Amount
PR-838	5 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -80°C

Avoid freeze / thaw cycles

Form

Liquid. Supplied in 20 mM Tris-Cl, 25% Glycerol, 100 mM KCl, 1 mM DTT, 0.2 mM EDTA.

Application

Recombinant LRH-1 can be used for protein-protein interaction assays.

Activity

1 unit equals 1 nanogram (ng) of purified protein.

Purity

> 95% by SDS-PAGE

Description

LRH-1 or HB1F for human B1-binding factor belongs to the fushi tarazu factor-1 (FTZ-F1) subfamily of orphan nuclear receptors and is closely related to steroidogenic factor-1. LRH1 contains a DNA-binding domain with 2 zinc finger motifs, an FTZ-F1 box, and a ligand-binding domain. Cholesterol 7- α -hydroxylase is the first and rate-limiting enzyme in a pathway through which cholesterol is metabolized to bile acids.

Elevated promoter-specific repressor protein (SHP) inactivates LRH1 by forming a heterodimeric complex that leads to promoter-specific repression of both CYP7A1 and SHP. These results revealed an elaborate autoregulatory cascade mediated by nuclear receptors for the maintenance of hepatic cholesterol catabolism. LRH1 specifically binds and activates viral hepatitis B enhancer II, an essential element for the liver-specific regulation of hepatitis B virus gene expression. CPF is a key regulator of human CYP7A gene expression in the liver. SHP1 represses expression of CYP7A1 by inhibiting the activity of LRH1 which regulates CYP7A1 expression positively. This bile acid-activated regulatory cascade provides a molecular basis for the coordinate suppression of CYP7A1 and other genes involved in bile acid biosynthesis.

Selected References:

- Lu, T. T. et al. (2000) Molecular basis for feedback regulation of bile acid synthesis by nuclear receptors. *Mol. Cell* **6**:507.
Goodwin, B. et al. (2000) A regulatory cascade of the nuclear receptors FXR, SHP-1, and LRH-1 represses bile acid biosynthesis. *Mol. Cell* **6**:517.
Li, M. et al. (1998) Cloning and characterization of a novel human hepatocyte transcription factor, hB1F, which binds and activates enhancer II of hepatitis B virus. *J. Biol. Chem.* **273**:29022.