

LRH-1^{GST}

Liver Receptor Homolog 1 human, recombinant, *E. coli*

Cat. No.	Amount
PR-832	10 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-HCl pH 8.0, 20% glycerol, 100 mM KCl, 0.2 mM EDTA and 1 mM DTT.

Application

Purified LRH-1 can be used for DNA, protein-protein interaction, and gel mobility shift assays.

Purity

>95% by SDS-PAGE

Description

LRH-1 (NR5A2) is expressed specifically in pancreas and liver, playing important roles in the regulation of several liver-specific genes. LRH-1 is a mammalian homologue of *Drosophila fushi tarazu* factor (dFTZ-F1) and structurally belongs to the orphan nuclear receptor superfamily. LRH-1 can recognize the DNA sequence 5'-AAGGTCA-3', the canonical recognition motif for steroidogenic factor 1 (SF-1). Enhancer II (ENII) is one of the critical cis-elements in the Hepatitis B Virus (HBV) genome for the hepatic viral gene transcription and DNA replication. The liver-specific activity of ENII is regulated by multiple liver-enriched transcription factors, including LRH-1/hB1F. The role LRH-1 and dosage-sensitive sex reversal, adrenal hypoplasia congenital critical region on the X chromosome, gene 1 (DAX-1) in the regulation of StAR gene expression in human granulosa cell tumor cells has been investigated. LRH-1, is expressed in granulosa cells and has been shown to synergize with the cAMP signaling system to regulate the gonadal type II aromatase promoter in transient transfection assays. Observations support a direct role for LRH-1 in the induction of the progesterone but not the estrogen biosynthetic pathway during granulosa cell differentiation. The human nuclear receptor liver receptor homolog 1 (hLRH-1) plays an important role in the development of breast carcinomas. results indicate that hLRH-1's control of gene expression is mediated by phospholipid binding, and establish hLRH-1 as a novel target for compounds designed to slow breast cancer development.

Selected References:

- Ortlund *et al.* (2005) Modulation of human nuclear receptor LRH-1 activity by phospholipids and SHP. *Nat. Struct. Mol. Biol.* **12**:357.
- Saxena *et al.* (2004) Liver receptor homolog-1 stimulates the progesterone biosynthetic pathway during follicle-stimulating hormone-induced granulosa cell differentiation. *Endocrinology* **145**:3821.
- Kim *et al.* (2004) Liver receptor homolog-1 regulates the expression of steroidogenic acute regulatory protein in human granulosa cells. *J. Clin. Endocrinol. Metab.* **89**:3042.
- Cai *et al.* (2003) LRH-1/hB1F and HNF1 synergistically upregulate hepatitis B virus gene transcription and DNA replication. *Cell Res.* **13**:451.
- Wang *et al.* (2001) Liver receptor homologue-1 is expressed in the adrenal and can regulate transcription of 11 beta-hydroxylase. *J. Mol. Endocrinol.* **27**:255.
- Zhang *et al.* (2001) Characterization of the genomic structure and tissue-specific promoter of the human nuclear receptor NR5A2 (hB1F) gene. *Gene* **273**:239.



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