

LXR- α

Liver-X Receptor, α -isoform human, recombinant, *E. coli*

Cat. No.	Amount
PR-744	10 μ g

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, 100 mM KCl, 0.2 mM EDTA, 1 mM DTT, 20% glycerol.

Activity

20 ng are sufficient for a gel-mobility shift assay and 100 ng are sufficient for a protein-protein interaction assay.

Application

LXR has been applied in DNA and protein-protein interactions assays.

Molecular Weight

56 kDa

Purity

> 95% by SDS-PAGE

Description

Liver X Receptors (LXRs) are nuclear receptors that regulate the metabolism of cholesterol and bile acids. There are two subtypes of LXRs, LXR α and LXR β . LXR α is preferentially expressed in liver, small intestine, kidney and spleen. In contrast, LXR β expression is ubiquitous. The genomic structure and the promoter regions of the two LXR genes contain specific regulatory sites, which suggest that LXRs may have physiological roles in the immune system. Like other nuclear receptors, LXRs heterodimerize with Retinoid X Receptor (RXR) for function. LXRs are activated by naturally occurring oxysterols and regulate the expression of target genes, including ATP binding cassette transporter 1 (ABC1), ATP binding cassette transporter 8 (ABC8) and cholesterol ester transfer protein (CETP). LXR α is thought to play a major role in the control of cholesterol catabolism by stimulating the expression of cholesterol 7 α -hydroxylase (CYP7A1), the rate limiting enzyme of bile acid synthesis.

Recombinant LXR is isolated from an *E. coli* strain that carries the coding sequence of the human LXR α under the control of a T7 promoter.

Selected References:

- Peet *et al.* (1998) The LXRs: a new class of oxysterol receptors. *Curr. Opin. Genet. Dev.* **8**:571.
- Willy *et al.* (1995) LXR, a nuclear receptor that defines a distinct retinoid response pathway. *Genes Dev.* **9**:1033.
- Apfel *et al.* (1994) A novel orphan receptor specific for a subset of thyroid hormone-responsive elements and its interaction with the retinoid/thyroid hormone receptor subfamily. *Mol. Cell. Biol.* **14**:7025.
- Song *et al.* (1994) Ubiquitous receptor: a receptor that modulates gene activation by retinoic acid and thyroid hormone receptors. *Proc. Natl. Acad. Sci. USA* **91**:10809.
- Alberti *et al.* (2000) Structural characterisation of the mouse nuclear oxysterol receptor genes LXR α and LXR β . *Gene* **243**:93.
- Janowski *et al.* (1996) An oxysterol signalling pathway mediated by the nuclear receptor LXR α . *Nature* **383**:728.
- Lehmann *et al.* (1997) Activation of the nuclear receptor LXR by oxysterols defines a new hormone response pathway. *J. Biol. Chem.* **272**:3137.
- Janowski *et al.* (1999) Structural requirements of ligands for the oxysterol liver X receptors LXR α and LXR β . *Proc. Natl. Acad. Sci. USA* **96**:266.
- Luo *et al.* (2000) Sterol upregulation of human CETP expression *in vitro* and in transgenic mice by an LXR element. *J. Clin. Invest.* **105**:513.
- Venkateswaran *et al.* (2000) Human white/murine ABC8 mRNA levels are highly induced in lipid-loaded macrophages. A transcriptional role for specific oxysterols. *J. Biol. Chem.* **275**:14700.
- Peet *et al.* (1998) Cholesterol and bile acid metabolism are impaired in



LXR- α

Liver-X Receptor, α -isoform
human, recombinant, *E. coli*

mice lacking the nuclear oxysterol receptor LXR alpha. *Cell* **93**:693.