



# Recombinant Protein Technical Manual

**Recombinant Rat LIFR/CD118 Protein (His Tag)(Active)**  
RPES4438

## Product Data:

**Product SKU:** RPES4438

**Size:** 50µg

**Species:** Rat

**Expression host:** HEK293 Cells

**Uniprot:** G3V7K2

## Protein Information:

**Molecular Mass:** 90 kDa

**AP Molecular Mass:** 116 kDa

**Tag:** C-His

**Bio-activity:** 1. Measured by its ability to bind mouse LIF-Fc in a functional ELISA. 2. Measured by its ability to inhibit the recombinant human LIF mediated inhibition in the M1 mouse myeloid leukemia cells. The ED50 for this effect is typically 8-40 ng/mL in the presence of 2 ng/mL recombinant human LIF.

**Purity:** > 95 % as determined by SDS-PAGE

**Endotoxin:** < 1.0 EU per µg of the protein as determined by the LAL method

**Storage:** Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from sterile PBS, pH 7.4

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:** Functional ELISA

**Synonyms:** LIFR

## Immunogen Information:

**Sequence:** Met1-Ser829

## Background:

LIFR (leukemia inhibitory factor receptor) belongs to the family of cytokine receptors. LIFR forms a high-affinity receptor complex with gp130, which mediates the activity of LIF (leukemia inhibitory factor) and thus affects the differentiation, proliferation, and survival of a wide variety of cells in the adult and the embryo. Besides LIF, LIFR can also bind to and activate CNTF (ciliary neurotrophic factor) and CLC (cardiotrophin like cytokine). Evidence showed that in the retina, LIFR activating LIF, CT and cardiotrophin like cytokine (CLC) are strongly upregulated in response to preconditioning with bright cyclic light leading to robust activation of signal transducer and activator of transcription-3 (STAT3) in a time-dependent manner. Further, blocking LIFR activation during preconditioning using a LIFR antagonist (LIF05) attenuated the induced STAT3 activation and also resulted in reduced preconditioning-induced protection of the retinal photoreceptors. These data demonstrate that LIFR and its ligands play an essential role in endogenous neuroprotective mechanisms triggered by preconditioning-induced stress. LIFR was newly found to be a suppressor of hepatocellular carcinoma (HCC), one of the world's top five causes of cancer-related deaths.