Data Sheet (Cat.No.TMPY-02434)

TargetMol

Prolactin Receptor Protein, Rat, Recombinant (His)

General Information

Synonyms:	prolactin receptor;RATPRLR;MGC105486
Protein Construction:	A DNA sequence encoding the rat PRLR (P05710-1) extracellular domain (Met 1-Asp 229) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 20
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	P05710-1
Molecular Weight:	26 kDa (predicted); 38 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 97 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Prolactin receptor (PRLR) is a single-pass transmembrane receptor belonging to the type I cytokine receptor superfamily, and contains two fibronectin type-III domains. All class 1 ligands activate their respective receptors by clustering mechanisms. Ligand binding results in the transmembrane PRLR dimerization, followed by phosphorylation and activation of the molecules involved in the signaling pathways, such as Jak-STAT, Ras/Raf/MAPK. The PRLR contains no intrinsic tyrosine kinase cytoplasmic domain but associates with a

cytoplasmic tyrosine kinase, JAK2. PRLR mainly serves as the receptor for the pituitary hormone prolactin (PRL), a secreted hormone that affects reproduction and homeostasis in vertebrates. PRLR can be regulated by an interplay of two different mechanisms, PRL or ovarian steroid hormones independently or in combination in a tissue-specific manner. The role of the hormone prolactin (PRL) in the pathogenesis of breast cancer is mediated by its cognate receptor (PRLR). Ubiquitin-dependent degradation of the PRLR that negatively regulates PRL signaling is triggered by PRL-mediated phosphorylation of PRLR on Ser349 followed by the recruitment of the beta-transducin repeats-containing protein (beta-TrCP) ubiquitin-protein isopeptide ligase. which altered PRLR stability may directly influence the pathogenesis of breast cancer.

Reference

Bole-Feysot C, et al. (1998) Prolactin (PRL) and its receptor: actions, signal transduction pathways and phenotypes observed in PRL receptor knockout mice. Endocr Rev. 19(3): 225-68.

Goffin V, et al. (1999) From the molecular biology of prolactin and its receptor to the lessons learned from knockout mice models. Genet Anal. 15(3-5): 189-201.

Li Y, et al. (2006) Stabilization of prolactin receptor in breast cancer cells. Oncogene. 25(13): 1896-902.

Shao R, et al. (2008) Differences in prolactin receptor (PRLR) in mouse and human fallopian tubes: evidence for multiple regulatory mechanisms controlling PRLR isoform expression in mice. Biol Reprod. 79(4): 748-57.

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