

## Product Information

### Prolactin human

recombinant, expressed in *Escherichia coli*  
BioReagent, suitable for cell culture

Catalog Number **L4021**

### Synonym: Luteotropic Hormone

#### Product Description

Prolactin is from a DNA sequence encoding the mature human prolactin sequence, amino acids 29-227<sup>1</sup>, and expressed in *Escherichia coli*. The 200 amino acid residue methionyl form of recombinant human prolactin has a predicted molecular mass of ~ 24 kDa.

Prolactin is a lactogenic hormone that plays a role in breast cancer, regulation of reproductive function, and immunoregulation. Prolactin cDNA encodes a 227 amino acid residue protein with a putative 28 amino residue signal peptide. Removal of the signal peptide results in the mature hormone corresponding to amino acids 29-227 of natural prolactin.<sup>1</sup> There are several natural occurring molecular forms of prolactin, including a monomer, a non-glycosylated form, and a glycosylated form.<sup>2,3</sup>

Prolactin is a neuroendocrine hormone that is synthesized by the anterior pituitary, placenta, brain, uterus, dermal fibroblasts, decidua, B cells, T cells, NK cells and breast cancer cells. In the immune system, prolactin, acting as a proliferative growth factor, is secreted by human PBMC. Also, treating human PBMC with prolactin enhances production of IFN $\gamma$ .<sup>4</sup> Prolactin signal transduction involves the JAK/STAT families and Src kinase family.

The prolactin receptor is a transmembrane type 1 glycoprotein that belongs to the cytokine hematopoietic receptor family. A large number of cells and organs express prolactin receptor, including B cells, T cells, macrophages, monocytes, neutrophils, CD34<sup>+</sup> progenitor cells,<sup>5</sup> mammary gland, kidney, adrenals, ovaries, testis, prostate, seminal vesicles and hypothalamus.

#### Reagent

Supplied lyophilized from a 0.2  $\mu$ m-filtered solution in 10 mM phosphate and 50 mM sodium chloride, pH 8.0.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

Reconstitute the contents of the vial using sterile 4 mM HCl containing at least 1 mg/mL bovine serum albumin. Prepare a stock solution of no less than 100  $\mu$ g/ml.

#### Storage/Stability

Store at -20 °C. Upon reconstitution, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing is not recommended.

#### Product Profile

The biological activity of Prolactin is measured in a cell proliferation assay using the rat lymphoma, Nb2-11.<sup>6</sup>

Purity: >97% as determined by SDS-PAGE, visualized with silver stain.

Endotoxin: <1 EU/ $\mu$ g as determined by LAL

#### References

1. Cooke, N.E., et al., Human prolactin. cDNA structural analysis and evolutionary comparisons, *J. Biol. Chem.*, **256**, 4007-4016 (1981).
2. Lewis, U.J., et al., Glycosylated human prolactin, *Endoc.*, **116**, 359-363 (1985).
3. Hoffman, T., et al., Glycosylation of human prolactin regulates hormone bioactivity and metabolic clearance, *J. Endocrinol. Invest.*, **16**, 807-816 (1993).
4. Cesario, T.C., et al., Enhanced yields of gamma interferon in prolactin treated human peripheral blood mononuclear cells, *Proc. Soc. Exp. Biol. Med.*, **205**, 89-95 (1994).

5. Bellone, G., et al., Regulatory action of prolactin on the in vitro growth of CD34<sup>+</sup> human hemopoietic progenitor cells, *J. Cell Physiol.*, **163**, 221-231 (1995).
6. Gout, P.W., et al., Prolactin-stimulating growth of cell cultures established from malignant Nb rat lymphomas, *Cancer Research*, **40**, 2433-2436 (1980).

ADM,PHC 08/11-1