

Product Information

Prolactin, human recombinant, expressed in HEK cells

Catalog Number **SRP9000**
Storage Temperature -20°C

Synonym: PRL

Product Description

Prolactin is a lactogenic hormone that plays a role in breast cancer, regulation of reproductive function, and immunoregulation.¹ The prolactin cDNA encodes a 227 amino acid residue protein with a putative 28 amino acid residue signal peptide.¹ Removal of the signal peptide results in the mature hormone corresponding to amino acids 29–227 of natural prolactin.¹

There are several natural occurring molecular forms of prolactin, including a monomer, a non-glycosylated form, and a glycosylated form.^{2,3} Glycosylated human prolactin (G-hPRL) was first isolated and purified from human pituitaries by Lewis *et al.*,² with an estimated molecular mass of ~25,000 Da, and an immunological and biological activity of 25–50% of the non-glycosylated hPRL.^{4,8} The presence of a unique and partially occupied glycosylation site in Asn³¹ in human, monkey, ovine, porcine, dromedary, equine, and whale PRL makes it an ideal model of glycosylation for N-glycan studies since it exhibits the simplest type of glycosylation macroheterogeneity, with an occupancy range of 10–30% of G-hPRL relative to the total hPRL of either pituitary or recombinant origin.^{6,9} It has been postulated that hPRL glycosylation might possibly modulate the bioactivity of the circulating pool of the hormone, perhaps by selectively down regulating PRL action at individual target tissues.¹⁰

This recombinant, human prolactin product is expressed in human HEK cells as a 199 amino acid, glycosylated protein, with a calculated molecular mass of 23 kDa. It is supplied as a solution in 0.2 μm filtered phosphate buffered saline with no additives or carriers. It is aseptically filled.

EC₅₀: ≤ 2 ng/mL

The EC₅₀ is defined as the effective concentration of prolactin that elicits a 50% increase of cell growth. The biological activity is determined by the dose dependent stimulation of the proliferation of Nb2-11 cells.

Purity: $\geq 95\%$ (SDS-PAGE)

Endotoxin level: ≤ 1 EU/ μg of prolactin

Precautions and Disclaimer

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

Preparation Instructions

Briefly centrifuge the vial before opening. After initial thawing it is recommended to store the protein in working aliquots at -20°C . The product can be diluted in PBS.

Storage/Stability

Store the product at -20°C . The product retains activity for at least 2 years as supplied.

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, *Endocrinology*, **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. Pellegrini, I. et al., Polymorphism of prolactin secreted by human prolactinoma cells: immunological, receptor binding, and biological properties of the glycosylated and nonglycosylated forms. *Endocrinology*, **122**, 2667–2674 (1988).
5. Lewis, U.J. et al., Two forms of glycosylated human prolactin have different pigeon crop sac-stimulating activities. *Endocrinology*, **124**, 1558–1563 (1989).
6. Sinha, Y.N., Structural variants of prolactin: occurrence and physiological significance. *Endocr. Rev.*, **16**, 354–369 (1995).
7. Price, A.E. et al., Studies on the microheterogeneity and in vitro activity of glycosylated and nonglycosylated recombinant human prolactin separated using a novel purification process. *Endocrinology*, **136**, 4827–4833 (1995).
8. Soares, C.R.J. et al., High level synthesis of human prolactin in Chinese hamster ovary cells. *Biotechnol. Appl. Biochem.*, **32**, 127–135 (2000).
9. Butnev, V.Y. et al., Glycosylated equine prolactin and its carbohydrate moiety. *J. Protein Chem.*, **15**, 413–426 (1996).
10. Freeman, M.E. et al., Prolactin: structure, function, and regulation of secretion. *Physiol. Rev.*, **80**, 1523–1631 (2000).

NA,GA,MAM 05/16-1