

DESCRIPTION

Source *E. coli*-derived
Leu29-Cys227, with an N-terminal Met
Accession # Q5THQ0

N-terminal Sequence Analysis Met

Predicted Molecular Mass 24 kDa

SPECIFICATIONS

Activity Measured in a cell proliferation assay using Nb2-11 rat lymphoma cells. Gout, P.W. *et al.* (1980) *Cancer Res.* **40**:2433.
The ED₅₀ for this effect is 0.03-0.1 ng/mL.

Endotoxin Level <0.01 EU per 1 µg of the protein by the LAL method.

Purity >97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 µm filtered solution in Phosphate and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile 4 mM HCl containing 1 mg/mL bovine serum albumin.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Prolactin (gene name PRL) is a secreted neuroendocrine pituitary hormone that acts primarily on the mammary gland to promote lactation, but has pleiotropic effects in both males and females (1-6). Prolactin is predominantly found as 199 amino acid, 25 kDa glycosylated and 23 kDa non-glycosylated monomers (6). Human prolactin shares only 60% and 63% amino acid sequence identity with mouse and rat prolactin, respectively, although rat prolactin can activate the human prolactin receptor (3). Post-translational modifications such as polymerization, complex formation with IgG (in humans), glycosylation, and proteolytic cleavage can alter the activities of prolactin (6-8). Non-glycosylated prolactin is produced by the pituitary and packaged in storage granules before secretion, while glycosylated prolactin is reported to be constitutively secreted, have lower biological potency, and be removed from the circulation more quickly (3, 6, 7). Cleavage by matrix metalloproteinases or Cathepsin D can produce N-terminal 16 kDa antiangiogenic fragments also called vasoinhibins (9, 10). Thrombin can produce C-terminal 16 kDa fragments that are not antiangiogenic (3). Prolactin is synthesized mainly by the anterior pituitary in all mammals, where secretion is under tonic inhibition by hypothalamic dopamine (2, 3). In humans, prolactin is also produced peripherally (2-5). Prolactin expression is low during early human pregnancy, but increases in late pregnancy (2, 3). The prolactin receptor (gene name PRLR) is a transmembrane type I glycoprotein that belongs to the cytokine hematopoietic receptor family. Expression of the prolactin receptor is widespread (2-5). Each prolactin molecule is thought to bind two receptor molecules (11). In addition to its lactogenic activity, peripherally produced prolactin plays roles in breast and prostate cancer development, regulation of reproductive function, and immunoregulation (5, 6).

References:

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