

DESCRIPTION	
Species Reactivity	Mouse/Rat
Specificity	Detects mouse and rat Prolactin in Western blots. In sandwich immunoassays, less than 1% cross-reactivity with recombinant human Prolactin is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse Prolactin Leu32-Cys228 Accession # NP_035294
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.25 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	Perfusion fixed frozen sections of mouse skin and thymus
Mouse Prolactin Sandwich Immunoassay		Reagent
ELISA Capture	0.2-0.8 µg/mL	Mouse/Rat Prolactin Antibody (Catalog # AF1445)
ELISA Detection	0.1-0.4 µg/mL	Mouse Prolactin Biotinylated Antibody (Catalog # BAF1445)
Standard		Recombinant Mouse Prolactin (Catalog # 1445-PL)
Neutralization	Measured by its ability to neutralize Prolactin-induced proliferation in the Nb2-11 rat lymphoma cell line. Gout, P. W. <i>et al.</i> (1980) <i>Cancer Research</i> 40 :2433. The Neutralization Dose (ND ₅₀) is typically 0.25-1.0 µg/mL in the presence of 10 ng/mL Recombinant Mouse Prolactin.	

DATA

Western Blot

Detection of Mouse and Rat Prolactin by Western Blot. Western blot shows lysates of mouse pituitary tissue and rat pituitary tissue. PVDF membrane was probed with 0.25 µg/mL of Goat Anti-Mouse/Rat Prolactin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1445) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for Prolactin at approximately 23 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Neutralization

Cell Proliferation Induced by Prolactin and Neutralization by Mouse Prolactin Antibody. Recombinant Mouse Prolactin (Catalog # 1445-PL) stimulates proliferation in the Nb2-11 rat lymphoma cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Mouse Prolactin (10 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Mouse/Rat Prolactin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1445). The ND₅₀ is typically 0.25-1.0 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Prolactin (PRL) is a neuroendocrine pituitary hormone. Prolactin is synthesized by the anterior pituitary, placenta, brain, uterus, dermal fibroblasts, decidua, B cells, T cells, NK cells and breast cancer cells. Originally characterized as a lactogenic hormone, further studies have demonstrated broader roles in breast cancer development, regulation of reproductive function, and immunoregulation. In the immune system, Prolactin has been shown to be secreted by human PBMC and to act as a proliferative growth factor. Additionally, Prolactin treatment of human PBMC has been shown to enhance IFN- γ production. In the breast, Prolactin-induced morphogenesis of the mammary cells is mediated through IGF-2, which in turn upregulates cyclin D1. Prolactin has several molecular forms. The predominant form is a monomer; the non-glycosylated form is 23 kDa and the glycosylated form is 25 kDa. Glycosylated Prolactin is removed from the circulation faster and has been reported to have lower biological potency. Mouse Prolactin cDNA encodes a 228 amino acid (aa) residue protein with a putative 31 aa residue signal peptide. The Prolactin receptor is a transmembrane type I glycoprotein that belongs to the cytokine hematopoietic receptor family. B cells, T cells, macrophages, NK cells, monocytes, CD34⁺ progenitor cells, neutrophils, mammary gland, liver, kidney, adrenals, ovaries, testis, prostate, seminal vesicles, and hypothalamus have all been shown to express the Prolactin receptor. Three forms of the receptor, generated by differential splicing, have been identified. These isoforms differ in the length of their cytoplasmic domains. It is believed that the short cytoplasmic form is non-functional. Prolactin signal transduction involves the JAK/STAT families and Src kinase family (1-9).

References:

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