

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat Prolactin R in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human Prolactin R or recombinant mouse Prolactin R is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 218623
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat Prolactin R Gln20-Asp229 Accession # P05710
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

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

Stability & Storage Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

The neuroendocrine pituitary hormone Prolactin (PRL), also known as lactotrophin, mamotrophin, luteotropic hormone (LTH), or luteotropin, is a secreted hormone that affects reproduction and homeostasis in vertebrates. The functions of PRL can be placed in six broad categories: 1) reproduction and lactation; 2) growth and development; 3) endocrinology and metabolism; 4) brain and behavior; 5) immunomodulation; and 6) electrolyte balance (1, 2). PRL is secreted by the anterior pituitary gland, mammary gland, placenta, brain, uterus, decidua, dermal fibroblasts, B cells, T cells, NK cells, and some breast cancer cell lines. Although the major form of PRL is a 23 kDa monomeric protein, splice variants of 14, 16, and 22 kDa have been identified. PRL has also been found to be glycosylated, phosphorylated, dimerized, and polymerized. Glycosylation, phosphorylation, dimerization, or polymerization of PRL result in lower activity (2).

Cell activation by PRL is mediated by a single chain membrane-bound protein belonging to the class 1 cytokine superfamily. The PRL receptor (PRL R) contains an extracellular, transmembrane, and intracellular domain. Transcriptional regulation of the PRL R gene results in several different species-dependent isoforms of PRL R being produced. Although the cytoplasmic domains of the different isoforms vary in length and composition, their extracellular domains are identical. In rats, three major PRL receptor isoforms have been described, a short (291 amino acid), an intermediate (393 amino acid), and a long (591 amino acid) (2). PRL receptors are found in mammary tissue, pituitary gland, brain, heart, lung thymus, spleen, liver, pancreas, kidney, adrenal gland, uterus, skeletal muscle, and skin (3). A soluble form of PRL-R containing the 206 NH₂-terminal amino acids of the extracellular domain is secreted by mammary epithelial cells and is found in milk. Binding of the transmembrane PRL R results in ligand dimerization followed by binding and phosphorylation of Jak2. Jak2 then phosphorylates STAT and the long form of PRL R. C-src, fyn, and the Ras/Raf/MAP kinase pathway have also been found to be activated upon PRL R ligand binding (2).

PRODUCT SPECIFIC NOTICES

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