PRL-R (D-7): sc-377098

SANTA CRUZ®

BIOTECHNOLOGY

The Power to Question

BACKGROUND

The anterior pituitary secretes a variety of hormones that are involved in cell growth, differentiation and development. Prolactin, a 226 amino acid protein, plays a role in multiple processes, including cell growth, reproduction and immune function. Full length prolactin, as well as an alternative splice product lacking the third exon, are secreted by endothelial cells involved in angiogenesis. In addition to its role in mammary development and lactation, prolactin is known to play a role in the development of mammary cancer, acting as both a mitogen and a differentiating agent. Prolactin has also been shown to enhance the proliferation of B cell hybridomas, leading to an overall increase in antibody production. Prolactin reverses the antiproliferative effects of the immunosuppressive cytokine TGF-β. Prolactin is also associated with a variety of autoimmune diseases, including arthritis and type 1 diabetes. The receptor for Prolactin (PRL-R) belongs to the cytokine receptor superfamily. PRL-R is activated by ligand-induced homodimerization and subsequent cell signaling through the JAK/Stat pathway. The gene encoding human PRL-R maps to chromosome 5p13.2.

REFERENCES

1. Arden, K.C., et al. 1990. The receptors for prolactin and growth hormone are localized in the same region of human chromosome 5. Cytogenet. Cell Genet. 53: 161-165.

2. Maaskant, R.A., et al. 1996. The human prolactin receptor in the fetal membranes, decidua, and placenta. J. Clin. Endocrinol. Metab. 81: 396-405.

3. Goffin, V., et al. 1997. The prolactin/growth hormone receptor family: structure/function relationships. J. Mammary Gland Biol. Neoplasia 2: 7-17.

4. Goffin, V., et al. 1998. Prolactin: a hormone at the crossroads of neuroimmuno-endocrinology. Ann. N.Y. Acad. Sci. 840: 498-509.

CHROMOSOMAL LOCATION

Genetic locus: PRLR (human) mapping to 5p13.2.

SOURCE

PRL-R (D-7) is a mouse monoclonal antibody raised against amino acids 323-622 of PRL-R of human origin.

PRODUCT

Each vial contains 200 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PRL-R (D-7) is available conjugated to agarose (sc-377098 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377098 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377098 PE), fluorescein (sc-377098 FITC), Alexa Fluor® 488 (sc-377098 AF488), Alexa Fluor® 546 (sc-377098 AF546), Alexa Fluor® 594 (sc-377098 AF594) or Alexa Fluor® 647 (sc-377098 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377098 AF680) or Alexa Fluor® 790 (sc-377098 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

PRL-R (D-7) is recommended for detection of PRL-R of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PRL-R siRNA (h): sc-40167, PRL-R shRNA Plasmid (h): sc-40167-SH and PRL-R shRNA (h) Lentiviral Particles: sc-40167-V.
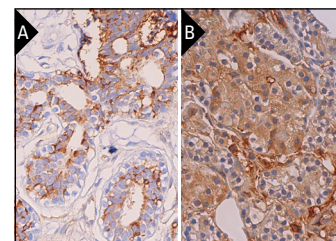
Molecular Weight of PRL-R: 100 kDa.

Positive Controls: T-47D cell lysate: sc-2293.

DATA
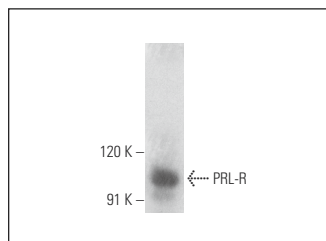
PRL-R (D-7): sc-377098. Western blot analysis of PRL-R expression in T-47D whole cell lysate.

PRL-R (D-7): sc-377098. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic staining of glandular cells and myoepithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human parathyroid gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Asad, A.S., et al. 2019. Prolactin and its receptor as therapeutic targets in glioblastoma multiforme. Sci. Rep. 9: 19578.

2. MacDonald, T.M., et al. 2020. Prolactin and androgen R1881 induce pro-survival carboxypeptidase-D and EDD E3 ligase in triple-negative and HER2+ breast cancer. Am. J. Cancer Res. 10: 1321-1343.

3. Shams, A., et al. 2021. Prolactin receptor-driven combined luminal and epithelial differentiation in breast cancer restricts plasticity, stemness, tumorigenesis and metastasis. Oncogenesis 10: 10.

4. Ding, H., et al. 2021. MICA-G129R: a bifunctional fusion protein increases PRLR-positive breast cancer cell death in co-culture with natural killer cells. PLoS ONE 16: e0252662.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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