

Plfr (M-121): sc-98474

BACKGROUND

Plfr (Proliferin-related protein), also known as PRP, PLF-RP or Prolactin-7D1, is a glycoprotein belonging to the somatotropin/prolactin family of growth hormones. Plfr shares significant homology with all members of this family. Plfr is a potent placental antiangiogenic hormone secreted during mid to late gestation (peaking at day 12) in response to several angiogenic factors. In contrast to Proliferin, a promoter of placental neovascularization, Plfr may function to limit endothelial invasiveness and regulate the cessation of placental neovascularization. Plfr is produced by murine giant cells and spongiotrophoblasts. This localization suggests that Plfr may act to generate a barrier zone, preventing the criss-crossing of maternal blood vessels extending from the uterus and fetal vessels extending from the placenta. Although a human Plfr has not been characterized, the mouse hormone can induce anti-angiogenic effects on human endothelial cells. This suggests that the Plfr signaling pathway is conserved between mouse and human.

REFERENCES

1. Linzer, D.I. and Nathans, D. 1985. A new member of the prolactin-growth hormone gene family expressed in mouse placenta. *EMBO J.* 4: 1419-1423.
2. Jackson, D., Volpert, O.V., Bouck, N. and Linzer, D.I. 1995. Stimulation and inhibition of angiogenesis by placental proliferin and proliferin-related protein. *Science* 266: 1581-1584.
3. Yamaguchi, M., Imai, T., Maeda, T., Sakata, M., Miyake, A. and Linzer, D.I. 1995. Cyclic adenosine 3',5'-monophosphate stimulation of placental proliferin and proliferin-related protein secretion. *Endocrinology* 136: 2040-2046.
4. Linzer, D.I. and Fisher, S.J. 1999. The placenta and the prolactin family of hormones: regulation of the physiology of pregnancy. *Mol. Endocrinol.* 13: 837-840.
5. Sahgal, N., Knipp, G.T., Liu, B., Chapman, B.M., Dai, G. and Soares, M.J. 2000. Identification of two new nonclassical members of the rat prolactin family. *J. Mol. Endocrinol.* 24: 95-108.
6. Bengtson, N.W. and Linzer, D.I. 2000. Inhibition of tumor growth by the antiangiogenic placental hormone, proliferin-related protein. *Mol. Endocrinol.* 14: 1934-1943.
7. Toft, D.J. and Linzer, D.I. 2000. Identification of three prolactin-related hormones as markers of invasive trophoblasts in the rat. *Biol. Reprod.* 63: 519-525.
8. Régulier, E., Paul, S., Marigliano, M., Kintz, J., Poitevin, Y., Ledoux, C., Roecklin, D., Cauet, G., Calenda, V. and Homann, H.E. 2001. Adenovirus-mediated delivery of antiangiogenic genes as an antitumor approach. *Cancer Gene Ther.* 8: 45-54.
9. Hemberger, M., Nozaki, T., Masutani, M. and Cross, J.C. 2003. Differential expression of angiogenic and vasodilatory factors by invasive trophoblast giant cells depending on depth of invasion. *Dev. Dyn.* 227: 185-191.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: Prl7d1 (mouse) mapping to 13 A3.1.

SOURCE

Plfr (M-121) is a rabbit polyclonal antibody raised against amino acids 124-244 mapping at the C-terminus of Plfr of mouse origin.

PRODUCT

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

APPLICATIONS

Plfr (M-121) is recommended for detection of Plfr of mouse and rat origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Plfr siRNA (m): sc-106420, Plfr shRNA Plasmid (m): sc-106420-SH and Plfr shRNA (m) Lentiviral Particles: sc-106420-V.

Molecular Weight of Plfr: 24 kDa.

Molecular Weight of glycosylated Plfr: 36-50 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.