SANTA CRUZ BIOTECHNOLOGY, INC.

Placental lactogen I (C-12): sc-376436

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Placental lactogens, also referred to as chorionic somatomammotropin hormones, are protein hormones. They are produced in the mammalian placenta and are similar in structure and function to growth hormones. Together, placental lactogens and growth factors play an essential role to assure successful lactation after pregnancy. Placental lactogens also modify the metabolic state of the mother during pregnancy to supply energy to the fetus. Placental lactogen I is a member of the somatotropin/prolactin family of hormones. The proteins in this family are crucial in mammalian growth control. Placental lactogen I is expressed primarily during mid-pregnancy, and it has been reported that DNA methylation regulates its tissue expression in rats. Placental lactogen II is expressed later in pregnancy and, in mice, its secretion is regulated by the inhibitory control of GH, the concentration of which increases rapidly at the beginning of the last half of pregnancy.

REFERENCES

1. Shida, M.M., et al. 1993. Trophoblast-specific transcription from the mouse Placental lactogen-I gene promoter. Mol. Endocrinol. 7: 181-188.
2. Farnsworth, R.L., et al. 1998. Calcyclin in the mouse decidua: expression and effects on placental lactogen secretion. Biol. Reprod. 59: 546-552.

CHROMOSOMAL LOCATION

Genetic locus: CSH1/CSH2 (human) mapping to 17q23.3; Prl3d1/Prl3d2/Prl3d3 (mouse) mapping to 13 A3.1.

SOURCE

Placental lactogen I (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 41-75 near the N-terminus of Placental lactogen I of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-376436 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Placental lactogen I (C-12) is recommended for detection of precursor and mature Placental lactogen I of mouse, rat and 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).

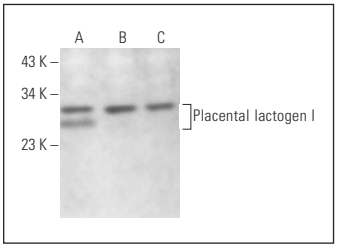
Molecular Weight of Placental lactogen I: 26 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, A549 cell lysate: sc-2413 or MCF7 whole cell lysate: sc-2206.

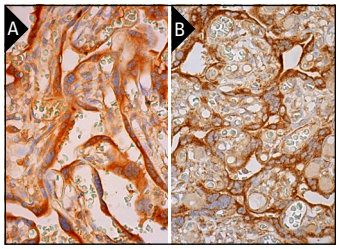
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Placental lactogen I (C-12): sc-376436. Western blot analysis of Placental lactogen I expression in NIH/3T3 (**A**), A549 (**B**) and MCF7 (**C**) whole cell lysates.



Placental lactogen I (C-12): sc-376436. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells (**A**,**B**).

SELECT PRODUCT CITATIONS

1. Yang, Y., et al. 2016. Hypoxic stress forces irreversible differentiation of a majority of mouse trophoblast stem cells despite FGF4. Biol. Reprod. 95: 110.
2. Xu, Y., et al. 2018. Transcription coactivator Cited1 acts as an inducer of trophoblast-like state from mouse embryonic stem cells through the activation of BMP signaling. Cell Death Dis. 9: 924.
3. Zhang, S., et al. 2019. Implantation initiation of self-assembled embryo-like structures generated using three types of mouse blastocyst-derived stem cells. Nat. Commun. 10: 496.
4. Wang, Y., et al. 2023. Establishment of bovine trophoblast stem cells. Cell Rep. 42: 112439.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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