

Gonadotropin α (R-19): sc-18224

BACKGROUND

Gonadotropin (also designated choriogonadotropin) is a hormone produced by the placenta in the first trimester of pregnancy and exists as a heterodimer formed from a common α chain and a unique β chain. The unique β chain confers biological specificity to thyrotropin, lutropin, follitropin and gonadotropin. The secreted α subunit maps to human chromosome 6 and the β subunit maps to human chromosome 19. Gonadotropin stimulates the ovaries to produce and maintain normal levels of the steroids essential for maintaining pregnancy, including estrogen and progesterone. Gonadotropin is a member of the cystine knot growth-factor superfamily, a group of proteins that contain a distinct arrangement of six cysteine residues and are expressed in placenta. The proper secretion and dimerization of gonadotropin depends on the conformation of the cystine knot, although biological activity is independent of this conformation.

REFERENCES

- Naylor, S.L., et al. 1983. Chromosome assignment of the genes encoding the α and β subunits of the glycoprotein hormones in man and mouse. *Somat. Cell Genet.* 9: 757-770.
- Laphorn, A.J., et al. 1994. Crystal structure of human chorionic gonadotropin. *Nature* 369: 455-461.
- Furuhashi, M., et al. 1994. Mutagenesis of cysteine residues in the human gonadotropin α subunit. Roles of individual disulfide bonds in secretion, assembly, and biologic activity. *J. Biol. Chem.* 269: 25543-25548.
- Sun, P.D., et al. 1995. The cystine-knot growth-factor superfamily. *Ann. Rev. Biophys. Biomol. Struct.* 24: 269-291.
- Furuhashi, M., et al. 1996. Disulfide bonds 7-31 and 59-87 of the α -subunit play a different role in assembly of human chorionic gonadotropin and lutropin. *Endocrinology* 137: 4196-4200.
- Sato, A., et al. 1997. Cystine knot of the gonadotropin α subunit is critical for intracellular behavior but not for *in vitro* biological activity. *J. Biol. Chem.* 272: 18098-18103.
- Lustbader, J.W., et al. 1998. Structural and molecular studies of human chorionic gonadotropin and its receptor. *Recent Prog. Horm. Res.* 53: 395-424.
- Vaananen, J.E., et al. 1998. Regulation of prostaglandin F 2α -receptor mRNA in human granulosa-luteal cells by human chorionic gonadotropin and prostaglandin. *Endocrine* 8: 261-267.

CHROMOSOMAL LOCATION

Genetic locus: CGA (human) mapping to 6q14.3; Cga (mouse) mapping to 4 A5.

SOURCE

Gonadotropin α (R-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Gonadotropin α of rat origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-18224 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Gonadotropin α (R-19) is recommended for detection of precursor and mature Gonadotropin α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

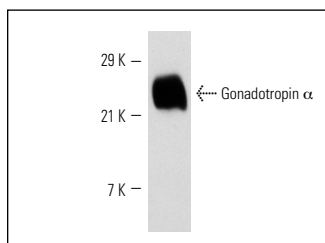
Gonadotropin α (R-19) is also recommended for detection of precursor and mature Gonadotropin α in additional species, including porcine and feline.

Suitable for use as control antibody for Gonadotropin α siRNA (h): sc-39538, Gonadotropin α siRNA (m): sc-39539, Gonadotropin α shRNA Plasmid (h): sc-39538-SH, Gonadotropin α shRNA Plasmid (m): sc-39539-SH, Gonadotropin α shRNA (h) Lentiviral Particles: sc-39538-V and Gonadotropin α shRNA (m) Lentiviral Particles: sc-39539-V.

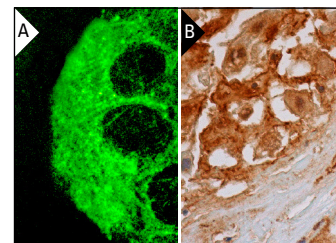
Molecular Weight of Gonadotropin α : 23.5 kDa.

Positive Controls: Rat pituitary extract.

DATA



Gonadotropin α (R-19): sc-18224. Western blot analysis of Gonadotropin α expression in rat pituitary tissue extract.



Gonadotropin α (R-19): sc-18224. Immunofluorescence staining of methanol-fixed JAR cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells and cytoplasmic and nuclear staining of decidual cells (B).

SELECT PRODUCT CITATIONS

- An, B.S., et al. 2006. Steroid receptor coactivator-3 is required for progesterone receptor trans-activation of target genes in response to gonadotropin-releasing hormone treatment of pituitary cells. *J. Biol. Chem.* 281: 20817-20824.

STORAGE

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