SANTA CRUZ BIOTECHNOLOGY, INC.

MAK (M-190): sc-135299

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. MAK (male germ cell-associated kinase) is a 623 amino acid member of the Ser/Thr protein kinase family. Expressed predominantly in testicular germ cells, MAK contains one protein kinase domain and is believed to play an important role in spermatogenesis, as it is involved in the regulation of cell cycle and cell fate. MAK is a homolog of the *S. cerevisiae* protein Ime2, a meiosis-specific protein kinase that is required for the initiation of meiosis and spore formation. MAK expression is induced by androgen and MAK physically associates with AR (androgen receptor), functioning as a co-activator. The knockdown of MAK expression results in diminished expression of AR-responsive genes and inhibition of androgen-induced growth.

REFERENCES

1. Matsushime, H., Jinno, A., Takagi, N. and Shibuya, M. 1990. A novel mammalian protein kinase gene (MAK) is highly expressed in testicular germ cells at and after meiosis. Mol. Cell. Biol. 10: 2261-2268.
2. Taketo, M., Jinno, A., Yamaguchi, S., Matushime, H., Shibuya, M. and Seldin, M.F. 1994. Mouse Mak gene for male germ cell-associated kinase maps to chromosome 13. Genomics 19: 397-398.
3. Shinkai, Y., Satoh, H., Takeda, N., Fukuda, M., Chiba, E., Kato, T., Kuramochi, T. and Araki, Y. 2002. A testicular germ cell-associated serine-threonine kinase, MAK, is dispensable for sperm formation. Mol. Cell. Biol. 22: 3276-3280.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 154235. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Miyata, Y. and Nishida, E. 2004. CK2 controls multiple protein kinases by phosphorylating a kinase-targeting molecular chaperone, Cdc37. Mol. Cell. Biol. 24: 4065-4074.

CHROMOSOMAL LOCATION

Genetic locus: Mak (mouse) mapping to 13 A3.3.

SOURCE

MAK (M-190) is a rabbit polyclonal antibody raised against amino acids 291-480 mapping within an internal region of MAK 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.

STORAGE

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

APPLICATIONS

MAK (M-190) is recommended for detection of MAK 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 MAK siRNA (m): sc-149234, MAK shRNA Plasmid (m): sc-149234-SH and MAK shRNA (m) Lentiviral Particles: sc-149234-V.

Molecular Weight of MAK: 71 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.