SANTA CRUZ BIOTECHNOLOGY, INC.

MAK (JK-10): sc-100432

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 (human) mapping to 6p24.2.

SOURCE

MAK (JK-10) is a mouse monoclonal antibody raised against recombinant MAK of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain 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 (JK-10) is recommended for detection of MAK of human 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 (h): sc-95387, MAK shRNA Plasmid (h): sc-95387-SH and MAK shRNA (h) Lentiviral Particles: sc-95387-V.

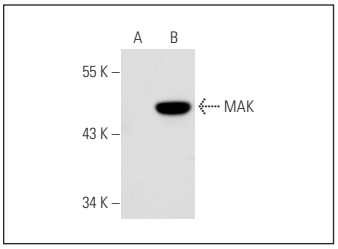
Molecular Weight of MAK: 71 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or MAK (h): 293T Lysate: sc-115533.

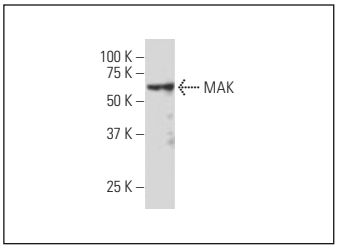
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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



MAK (JK-10): sc-100432. Western blot analysis of MAK expression in non-transfected: sc-117752 (**A**) and human MAK transfected: sc-115533 (**B**) 293T whole cell lysates.



MAK (JK-10): sc-100432. Western blot analysis of MAK expression in HeLa nuclear extract.

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.