SANTA CRUZ BIOTECHNOLOGY, INC.

Emi2 (4B6): sc-517089

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

F-box proteins are critical components of the SCF (skp1-CUL-1-F-box protein) type E3 ubiquitin ligase complex and are involved in substrate recognition and recruitment for ubiquitination. They are members of a larger family of proteins that are involved in the regulation of a wide variety of cellular processes (including the cell cycle, immune responses, signaling cascades and developmental events) through the targeting of proteins, such as cyclins, cyclin-dependent kinase inhibitors, IκB-α and β-catenin, for proteasomal degradation. Emi2 (endogenous meiotic inhibitor 2), also known as FBXO43 (F-box only protein 43) or ERP1, is a 708 amino acid protein that contains one F-box domain and one IBR-type zinc finger. Playing an important role in protein modification, Emi2 is required for the establishment and maintenance of oocyte arrest at the second meiotic metaphase, an event that is crucial for fertilization. Specifically, Emi2 is thought to induce meiotic arrest by inhibiting the activity of the APC (anaphase-promoting complex), thereby preventing the progression of meiosis. Emi2 is subject to phosphorylation and ubiquitination, both of which promote its degradation by the proteasome.

REFERENCES

1. Jin, J., et al. 2004. Systematic analysis and nomenclature of mammalian F-box proteins. Genes Dev. 18: 2573-2580.
2. Tung, J.J., et al. 2005. A role for the anaphase-promoting complex inhibitor Emi2/XErp1, a homolog of early mitotic inhibitor 1, in cytostatic factor arrest of *Xenopus* eggs. Proc. Natl. Acad. Sci. USA 102: 4318-4323.
3. Shoji, S., et al. 2006. Mammalian Emi2 mediates cytostatic arrest and transduces the signal for meiotic exit via Cdc20. EMBO J. 25: 834-845.
4. Hansen, D.V., et al. 2006. CaMKII and polo-like kinase 1 sequentially phosphorylate the cytostatic factor Emi2/XErp1 to trigger its destruction and meiotic exit. Proc. Natl. Acad. Sci. USA 103: 608-613.
5. Wu, J.Q. and Kornbluth, S. 2008. Across the meiotic divide-CSF activity in the post-Emi2/XErp1 era. J. Cell Sci. 121: 3509-3514.
6. Tang, W., et al. 2008. Cdc2 and Mos regulate Emi2 stability to promote the meiosis I-meiosis II transition. Mol. Biol. Cell 19: 3536-3543.
7. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 609110. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: FBXO43 (human) mapping to 8q22.2.

SOURCE

Emi2 (4B6) is a mouse monoclonal antibody raised against amino acids 1-110 representing partial length Emi2 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.

APPLICATIONS

Emi2 (4B6) is recommended for detection of Emi2 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

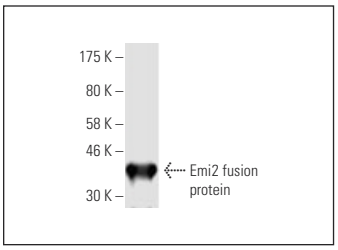
Suitable for use as control antibody for Emi2 siRNA (h): sc-77268, Emi2 shRNA Plasmid (h): sc-77268-SH and Emi2 shRNA (h) Lentiviral Particles: sc-77268-V.

Molecular Weight of Emi2: 71 kDa.

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, 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).

DATA



Emi2 (4B6): sc-517089. Western blot analysis of human recombinant Emi2 fusion protein.

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.