

DUSP13 (h3): 293T Lysate: sc-158459

BACKGROUND

Mitogen-activated protein (MAP) kinases are a large class of proteins involved in signal transduction pathways, which are activated by a range of stimuli and mediate a number of physiological and pathological changes in the cell. Dual specificity phosphatases (DUSPs) are a subclass of the protein tyrosine phosphatase (PTP) gene superfamily, which are selective for dephosphorylating critical phosphothreonine and phosphotyrosine residues within MAP kinases. DUSP gene expression is induced by a host of growth factors and/or cellular stresses, thereby negatively regulating MAP kinase superfamily members including MAPK/ERK, SAPK/JNK and p38. DUSP13, also designated TMDP or SKRP4, is abundantly expressed in testis with lower expression in skeletal muscle. DUSP13 is thought to be involved in the regulation of meiosis and/or differentiation of testicular germ cells during spermatogenesis.

REFERENCES

1. Keyse, S.M. 1995 An emerging family of dual specificity MAP kinase phosphatases. *Biochim. Biophys. Acta* 1265: 152-160.
2. Martell, K.J., Seasholtz, A.F., Kwak, S.P., Clemens, K.K. and Dixon, J.E. 1995. hVH-5: a protein tyrosine phosphatase abundant in brain that inactivates mitogen-act protein kinase. *J. Neurochem.* 65: 1823-1833.
3. Sun, H. 1998. Functional studies of dual-specificity phosphatases. *Methods Mol. Biol.* 84: 307-18.
4. Nakamura, K., Shima, H., Watanabe, M., Haneji, T. and Kikuchi, K. 1999. Molecular cloning and characterization of a novel dual-specificity protein phosphatase possibly involved in spermatogenesis. *Biochem. J.* 344: 819-825.
5. Camps, M., Nichols, A. and Arkinstall, S. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. *FASEB J.* 14: 6-16.
6. Chen, H.H., Luche, R., Wei, B. and Tonks, N.K. 2004. Characterization of two distinct dual specificity phosphatases encoded in alternative open reading frames of a single gene located on human chromosome 10q22.2. *J. Biol. Chem.* 279: 41404-41413.
7. Kim, S.J., Jeong, D.G., Yoon, T.S., Son, J.H., Cho, S.K., Ryu, S.E. and Kim, J.H. 2007. Crystal structure of human TMDP, a testis-specific dual specificity protein phosphatase: implications for substrate specificity. *Proteins* 66: 239-245.
8. Patterson, K.I., Brummer, T., O'Brien, P.M. and Daly, R.J. 2009. Dual-specificity phosphatases: critical regulators with diverse cellular targets. *Biochem. J.* 418: 475-489.

CHROMOSOMAL LOCATION

Genetic locus: DUSP13 (human) mapping to 10q22.2.

PRODUCT

DUSP13 (h3): 293T Lysate represents a lysate of human DUSP13 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

DUSP13 (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive DUSP13 antibodies. Recommended use: 10-20 µl per lane.

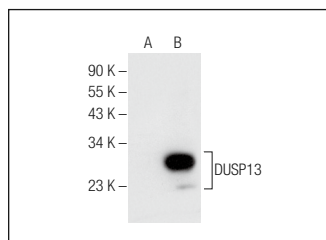
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

DUSP13 (C-4): sc-376417 is recommended as a positive control antibody for Western Blot analysis of enhanced human DUSP13 expression in DUSP13 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



DUSP13 (C-4): sc-376417. Western blot analysis of DUSP13 expression in non-transfected: sc-117752 (A) and human DUSP13 transfected: sc-158459 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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