SANTA CRUZ BIOTECHNOLOGY, INC.

MEK1 (aD-15): sc-12575

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Activation of extracellular signal-regulated kinase (ERK) or mitogen-activated protein kinase by MEK (mitogen-activated protein kinase or extracellular signal-regulated kinase kinase) is an essential event in the mitogenic growth factor-induced signal transduction pathway. Phosphorylation of MEKs correlates with their ability to phosphorylate and activate ErKs. MEK1 and MEK2 can also be activated by autophosphorylation. Lipopolysaccharide activates many of the MAPK family members of the immediate upstream MAPK activator MEK1, MEK2, and MEK3. In plants, MEK can phosphorylate and activate MAPK, and that Tyr phosphorylation is critical for the catalytic activity of MAPK in plants.

REFERENCES

1. Zheng, C.F. and Guan, K.L. 1993. Properties of MEKs, the kinases that phosphorylate and activate the extracellular signal-regulated kinases. J. Biol. Chem. 268: 23933-23939.
2. Swantek, J.L., Cobb, M.H. and Geppert, T.D. 1997. Jun N-terminal kinase/stress-activated protein kinase (JNK/SAPK) is required for lipopolysaccharide stimulation of tumor necrosis factor alpha (TNFα) translation: glucocorticoids inhibit TNFα translation by blocking JNK/SAPK. Mol. Cell. Biol. 17: 6274-6282.
3. Chen, Z., Hutchison, M. and Cobb, M.H. 1999. Isolation of the protein kinase TAO2 and identification of its mitogen-activated protein kinase/extracellular signal-regulated kinase kinase binding domain. J. Biol. Chem. 274: 28803-28807.
4. van der Bruggen, T., Nijenhuis, S., van Raaij, E., Verhoef, J. and van Asbeck, B.S. 1999. Lipopolysaccharide-induced tumor necrosis factor alpha production by human monocytes involves the Raf-1/MEK1-MEK2/ERK1-ERK2 pathway. Infect. Immun. 67: 3824-3829.
5. Huang, Y., Li, H., Gupta, R., Morris, P.C., Luan, S. and Kieber, J.J. 2000. ATMPK4, an *Arabidopsis* homolog of mitogen-activated protein kinase, is activated *in vitro* by AtMEK1 through threonine phosphorylation. Plant Physiol. 122: 1301-1310.

SOURCE

MEK1 (aD-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of MEK1 of *Arabidopsis thaliana* origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-12575 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

MEK1 (aD-15) is recommended for detection of MEK1 of *Arabidopsis thaliana* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Yang, W., et al. 2012. ERK1/2-dependent phosphorylation and nuclear translocation of PKM2 promotes the Warburg effect. Nat. Cell Biol. 14: 1295-1304.

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.