SANTA CRUZ BIOTECHNOLOGY, INC.

MEK-2 (A-1): sc-13159

BACKGROUND

A family of protein kinases located upstream of the MAP kinases and responsible for their activation has been identified. The prototype member of this family, designated MAP kinase kinase, or MEK-1, specifically phosphorylates the MAP kinase regulatory threonine and tyrosine residues present in the Thr-Glu-Tyr motif of ERK. A second MEK family member, MEK-2, resembles MEK-1 in its substrate specificity. MEK-3 (or MKK-3) functions to activate p38 MAP kinase, and MEK-4 (also called SEK1 or MKK-4) activates both p38 and JNK MAP kinases. MEK-5 appears to specifically phosphorylate ERK5, whereas MEK-6 phosphorylates p38 and p38β. MEK-7 (or MKK-7) phosphorylates and activates the JNK signal transduction pathway.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K2 (human) mapping to 19p13.3; Map2k2 (mouse) mapping to 10 C1.

SOURCE

MEK-2 (A-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-30 at the N-terminus of MEK-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MEK-2 (A-1) is available conjugated to agarose (sc-13159 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13159 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13159 PE), fluorescein (sc-13159 FITC), Alexa Fluor® 488 (sc-13159 AF488), Alexa Fluor® 546 (sc-13159 AF546), Alexa Fluor® 594 (sc-13159 AF594) or Alexa Fluor® 647 (sc-13159 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13159 AF680) or Alexa Fluor® 790 (sc-13159 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-13159 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

MEK-2 (A-1) is recommended for detection of MEK-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), 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), immunohistochemistry (including paraffin-embedded sections) (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 MEK-2 siRNA (h): sc-35905, MEK-2 siRNA (m): sc-35906, MEK-2 shRNA Plasmid (h): sc-35905-SH, MEK-2 shRNA Plasmid (m): sc-35906-SH, MEK-2 shRNA (h) Lentiviral Particles: sc-35905-V and MEK-2 shRNA (m) Lentiviral Particles: sc-35906-V.

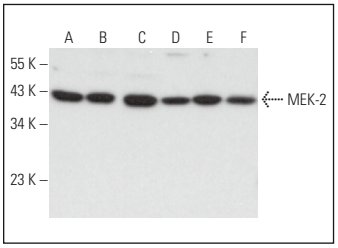
Molecular Weight of MEK-2: 47 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or BYDP whole cell lysate: sc-364368.

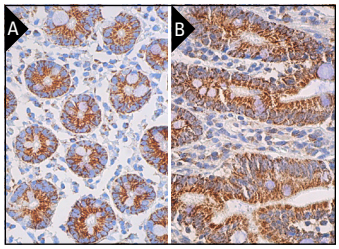
STORAGE

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

DATA



MEK-2 (A-1): sc-13159. Western blot analysis of MEK-2 expression in Jurkat (**A**), HeLa (**B**), MCF7 (**C**), TK-1 (**D**), c4 (**E**) and BYDP (**F**) whole cell lysates.



MEK-2 (A-1): sc-13159. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216 (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Gembitsky, D.S., et al. 2004. A prototype antibody microarray platform to monitor changes in protein tyrosine phosphorylation. Mol. Cell. Proteomics 3: 1102-1118.
2. Shama, J., et al. 2008. Major contribution of MEK-1 to the activation of ERK1/ERK2 and to the growth of LS174T colon carcinoma cells. Biochem. Biophys. Res. Commun. 372: 845-849.
3. Slater, J.A., et al. 2014. Stress-induced enzyme activation primes murine embryonic stem cells to differentiate toward the first extraembryonic lineage. Stem Cells Dev. 23: 3049-3064.
4. Jacenik, D., et al. 2019. G protein-coupled estrogen receptor mediates anti-inflammatory action in Crohn's disease. Sci. Rep. 9: 6749.
5. Jones, G.G., et al. 2019. SHOC2 phosphatase-dependent RAF dimerization mediates resistance to MEK inhibition in RAS-mutant cancers. Nat. Commun. 10: 2532.
6. Kobelt, D., et al. 2021. The newly identified MEK-1 tyrosine phosphorylation target MACC1 is druggable by approved MEK-1 inhibitors to restrict colorectal cancer metastasis. Oncogene 40: 5286-5301.
7. Cai, D., et al. 2024. UBE2C is a diagnosis and therapeutic biomarker involved in immune infiltration of cancers including lung adenocarcinoma. J. Cancer 15: 1701-1717.

RESEARCH USE

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