SANTA CRUZ BIOTECHNOLOGY, INC.

p38γ MAPK12 (E-5): sc-365550

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

MAP (mitogen-activated protein) kinases play a significant role in many biological processes, including cell adhesion and spreading, cell differentiation and apoptosis. p38α MAPK14, p38β MAPK11 and p38γ MAPK12 each contain one protein kinase domain and belong to the MAP kinase family. Expressed in different areas throughout the body with common expression patterns in heart, p38 proteins use magnesium as a cofactor to catalyze the ATP-dependent phosphorylation of target proteins. Via their catalytic activity, p38α MAPK14, p38β MAPK11 and p38γ MAPK12 are involved in a variety of events throughout the cell, including signal transduction pathways, cytokine production and cell proliferation and differentiation. The p38 proteins are subject to phosphoryation on Thr and Tyr residues, an event which is thought to activate the phosphorylated protein.

REFERENCES

1. Lee, J.C., et al. 1994. A protein kinase involved in the regulation of inflammatory cytokine biosynthesis. Nature 372: 739-746.
2. Han, J., et al. 1995. Molecular cloning of human p38 MAP kinase. Biochim. Biophys. Acta 1265: 224-227.
3. Li, Z., et al. 1996. The primary structure of p38γ: a new member of p38 group of MAP kinases. Biochem. Biophys. Res. Commun. 228: 334-340.
4. Jiang, Y., et al. 1996. Characterization of the structure and function of a new mitogen-activated protein kinase (p38β). J. Biol. Chem. 271: 17920-17926.
5. Tamura, K., et al. 2000. Requirement for p38α in erythropoietin expression: a role for stress kinases in erythropoiesis. Cell 102: 221-231.
6. Sudo, T., et al. 2002. Exip, a new alternative splicing variant of p38α, can induce an earlier onset of apoptosis in HeLa cells. Biochem. Biophys. Res. Commun. 291: 838-843.

CHROMOSOMAL LOCATION

Genetic locus: MAPK12 (human) mapping to 22q13.33; Mapk12 (mouse) mapping to 15 E3.

SOURCE

p38γ MAPK12 (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of p38γ MAPK12 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365550 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

p38γ MAPK12 (E-5) is recommended for detection of p38γ MAPK12 of mouse, rat and 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 p38γ MAPK12 siRNA (h): sc-39013, p38γ MAPK12 siRNA (m): sc-39014, p38γ MAPK12 shRNA Plasmid (h): sc-39013-SH, p38γ MAPK12 shRNA Plasmid (m): sc-39014-SH, p38γ MAPK12 shRNA (h) Lentiviral Particles: sc-39013-V and p38γ MAPK12 shRNA (m) Lentiviral Particles: sc-39014-V.

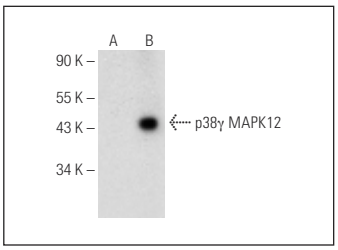
Molecular Weight of p38γ MAPK12: 38 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, human skeletal muscle extract: sc-363776 or pp38γ MAPK12 (m2): 293T Lysate: sc-122318.

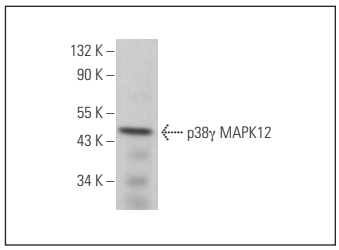
RECOMMENDED SUPPORT REAGENTS

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.

DATA



p38γ MAPK12 (E-5): sc-365550. Western blot analysis of p38γ MAPK12 expression in non-transfected: sc-117752 (**A**) and mouse p38γ MAPK12 transfected: sc-122318 (**B**) 293T whole cell lysates.



p38γ MAPK12 (E-5): sc-365550. Western blot analysis of p38γ MAPK12 expression in human skeletal muscle tissue extract.

SELECT PRODUCT CITATIONS

1. Chiang, H.M., et al. 2011. *Coffea arabica* extract and its constituents prevent photoaging by suppressing MMPs expression and MAP kinase pathway. Food Chem. Toxicol. 49: 309-318.
2. Chen, Z., et al. 2012. H_2O_2-induced secretion of tumor necrosis factor-α evokes apoptosis of cardiac myocytes through reactive oxygen species-dependent activation of p38 MAPK. Cytotechnology 64: 65-73.

RESEARCH USE

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