SANTA CRUZ BIOTECHNOLOGY, INC.

M-Ras (N-19): sc-8168

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mammalian c-H-, c-K- and N-Ras proto-oncogenes encode proteins that are ubiquitously expressed in vertebrate cells. c-H- and c-K-Ras are cellular homologs of the v-H- and v-K-Ras sequences originally isolated from the Harvey and Kirsten strains of rat sarcoma virus. Ras p21-encoded proteins bind GDP and GTP with high affinity and possess a low level intrinsic GTPase activity that can be stimulated over 100-fold by interaction with cytosolic GTPase activating protein (GAP), a potential effector for Ras p21 function. Point mutations at amino acids 12, 13, 59 and 61 within domains responsible for GTP binding and hydrolysis, activate Ras proteins to their oncogenic form and block the ability of their GTPase activities to be stimulated by GAP. M-Ras has been identified as a GTPase that shares structural similarities to the Ras family proteins. M-Ras is thought to play a role in reorganization of the Actin cytoskeleton.

REFERENCES

1. Shih, T.Y., et al. 1980. Guanine nucleotide-binding and autophosphorylating activities asso-ciated with the p21 Src protein of Harvey murine sarcoma virus. Nature 287: 686-691.
2. Ellis, R.W., et al. 1981. The p21 Src genes of Harvey and Kirsten sarcoma viruses originate from divergent members of a family of normal vertebrate genes. Nature 292: 506-511.
3. Barbacid, M. 1987. Ras genes. Annu. Rev. Biochem. 56: 779-827.
4. Trahey, M. and McCormick, F. 1987. A cytoplasmic protein stimulates normal N-Ras p21 GTPase, but does not affect oncogenic mutants. Science 238: 542-545.
5. Calés, C., et al. 1988. The cytoplasmic protein GAP is implicated as the target for regulation by the Ras gene product. Nature 332: 548-551.
6. Adari, H., et al. 1988. Guanosine triphosphatase activating protein (GAP) interacts with the p21 Ras effector binding domain. Science 240: 518-521.
7. Matsumoto, K., et al. 1997. Novel small GTPase M-Ras participates in reorganization of actin cytoskeleton. Oncogene 15: 2409-2417.

CHROMOSOMAL LOCATION

Genetic locus: MRAS (human) mapping to 3q22.3; Mras (mouse) mapping to 9 E3.3.

SOURCE

M-Ras (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of M-Ras of human origin.

STORAGE

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

PROTOCOLS

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

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-8168 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

M-Ras (N-19) is recommended for detection of M-Ras of mouse, rat and human 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).

M-Ras (N-19) is also recommended for detection of M-Ras in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for M-Ras siRNA (h): sc-41857, M-Ras siRNA (m): sc-41858, M-Ras shRNA Plasmid (h): sc-41857-SH, M-Ras shRNA Plasmid (m): sc-41858-SH, M-Ras shRNA (h) Lentiviral Particles: sc-41857-V and M-Ras shRNA (m) Lentiviral Particles: sc-41858-V.

Molecular Weight of M-Ras: 29 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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. Beckers, J., et al. 2005. Identification and validation of novel ErbB-2 (HER2, Neu) targets including genes involved in angiogenesis. Int. J. Cancer 114: 590-597.
2. Augsten, M., et al. 2006. Live-cell imaging of endogenous Ras-GTP illustrates predominant Ras activation at the plasma membrane. EMBO Rep. 7: 46-51.
3. Garneau, H., et al. 2007. Nuclear expression of E2F-4 induces cell death via multiple pathways in normal human intestinal epithelial crypt cells but not in colon cancer cells. Am. J. Physiol. Gastrointest. Liver Physiol. 293: G758-G772.

RESEARCH USE

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