

Store at
-20°C

#18070

Mutant Ras Antibody Sampler Kit



Cell Signaling
TECHNOLOGY®

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Entrez-Gene ID #3845, 4893
UniProt ID #P01116, P01111

New 04/17

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Ras (G12V Mutant Specific) (D2H12) Rabbit mAb	14412	20 µl	21 kDa	Rabbit IgG
Ras (G12D Mutant Specific) (D8H7) Rabbit mAb	14429	20 µl	21 kDa	Rabbit IgG
Ras (D2C1) Rabbit mAb	8955	20 µl	21 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Description: The Mutant Ras Antibody Sampler Kit provides an economical means of detecting common mutation in the Ras protein. The kit contains enough primary antibodies to perform at least two western blot experiments.

Background: The 21 kDa guanine-nucleotide binding proteins (K-Ras, H-Ras, and N-Ras) cycle between active (GTP-bound) and inactive (GDP-bound) forms (1). Receptor tyrosine kinases and G protein-coupled receptors activate Ras, which then stimulates the Raf-MEK-MAPK pathway (2-4). GTPase-activating proteins (GAP) normally facilitate the inactivation of Ras. However, research studies have shown that in 30% of human tumors, point mutations in Ras prevent the GAP-mediated inhibition of this pathway (5). The most common oncogenic Ras mutation found in tumors is Gly12 to Asp12 (G12D), which prevents Ras inactivation, possibly by increasing the overall rigidity of the protein (5,6). Additional oncogenic mutations of Ras have been observed at varying frequencies at codons 12, 13, and 61. The Gly12 to Val12 (G12V) mutation has been detected in a number of different cancers, including colorectal and thyroid cancer (7,8).

Background References:

- (1) Boguski, M.S. and McCormick, F. (1993) *Nature* 366, 643-54.
- (2) Avruch, J. et al. (1994) *Trends Biochem Sci* 19, 279-83.
- (3) Buday, L. and Downward, J. (1993) *Cell* 73, 611-20.
- (4) Huang, D.C. et al. (1993) *Mol Cell Biol* 13, 2420-31.
- (5) Bos, J.L. (1989) *Cancer Res* 49, 4682-9.
- (6) Ma, J. and Karplus, M. (1997) *J Mol Biol* 274, 114-31.
- (7) Prior, I.A. et al. (2012) *Cancer Res* 72, 2457-67.
- (8) Winder, T. et al. (2009) *Oncol Rep* 21, 1283-7.

Specificity/Sensitivity: Each antibody in the Mutant Ras Antibody Sampler kit detects endogenous levels of its target protein. Ras (D2C1) Rabbit mAb recognizes endogenous levels of total Ras protein, specifically K-Ras and N-Ras. This antibody does not cross-react with H-Ras or R-Ras.

Source/Purification: Monoclonal antibodies are produced by immunizing rabbits with synthetic peptides corresponding to G12V and G12D mutant sequences of human Ras protein. Ras (D2C1) Rabbit mAb was produced by immunizing rabbits with a recombinant protein specific to human K-Ras protein.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibody.*

Recommended Antibody Dilutions:

Western blotting 1:1000

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.