Revision 3

Store at -20C

#14412

Ras (G12V Mutant Specific) (D2H12) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, W-S	H	Endogenous	21	Rabbit IgG	#P01116	3845

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Simple Western™	1:10 - 1:50

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.*

Specificity/Sensitivity

Ras (G12V Mutant Specific) (D2H12) Rabbit mAb recognizes endogenous levels of Ras G12V mutant protein.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to G12V mutant sequence of human Ras protein.

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 (GAPs) 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.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **W-S:** Simple Western™

Cross-Reactivity Key

H: Human

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