Qty: 100 µg/200 µL

Mouse anti-K-Ras

Catalog No. 415700

Lot No.

Mouse anti-K-Ras

FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

Clone: 9.13 **Isotype**: IgG1

IMMUNOGEN

Peptide corresponding to amino acid residues from the C-terminal of human K-Ras protein.

SPECIFICITY

This antibody is specific for human K-Ras (K-Ras2, Ki-Ras, c-K-ras, GTPase KRas) protein (accession # NP_004976.2, P01116), which is 100% homologous with mouse, 95% with rat and 94% with bovine respectively. On Western blots of human HeLa and WI-38 cell lysates as well as rat KNRK and mouse NIH 3T3 cell lysates, it identifies the target band at~21 kDa.

REACTIVITY

Reactivity has been confirmed with human HeLa and WI-38 cell lysates as well as rat KNRK and mouse NIH 3T3 cell lysates using Western blotting. The reactivity has been also confirmed with rat KNRK cells using immunoprecipitation and with HeLa cells by immunofluorescence. Based on amino acid sequence homology, reactivity with bovine is also expected.

Sample	Western Blotting	Immuno-fluorescence	Immuno-precipitation
Human	+++	+++	ND
Mouse	+++	ND	ND
Rat	+++	ND	+++
Bovine	ND	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 2 µg/mL
Immunofluorescence: 2 µg/mL
Immunoprecipitation: 5 µg/IP reaction

(cont')

STORAGE

Store at 2-8°C for up to one month. Store at –20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

The mammalian Ras gene family of retrovirus-associated DNA sequences (ras) originally isolated from Harvey (H-Ras, Ha-Ras, RasH) and Kirsten (K-Ras, Ki-Ras, RasK) murine sarcoma viruses. Ras genes are widely conserved among animal species and sequences corresponding to both H-Ras and K-Ras genes have been detected in human, avian, murine, and non-vertebrate genomes. The closely related N-Ras gene has been detected in human neuroblastoma and sarcoma cell lines. Among the three Ras proto-oncogenes, K-Ras is the most important in terms of its impact on human cancer.[1]

Ras proteins transduce signals from membrane-bound receptors via multiple downstream effector pathways and thereby affect fundamental cellular processes, including proliferation, apoptosis, and differentiation. K-Ras acts as a molecular switch. In its normal form, the protein can be turned on and off to control pathways that regulate cell growth. The mutated form, however, is locked in the "on" position, causing cells to grow uncontrollably and, at the same time, turning off apoptosis. The nucleotide GTP (guanidine triphosphate) engages the switch to keep it in the "on" state. A portion of the Ras protein has an enzyme activity (a GTPase) which cleaves the GTP. This turns the switch "off" after the brief "on" period. In reality, the mutations of Ras do indeed inactivate a function, as most mutations are expected to do. The GTPase is inactivated by the mutations.[2]

K-Ras activating mutations play a key role in neoplastic progression and are particularly prevalent in colorectal, pancreatic, and lung cancers. Mutations of the K-Ras gene occur in over 90% of pancreatic carcinomas, making K-Ras proto-oncogene an important candidate for molecular targeted therapy.[3]

REFERENCES

1. Bos JL. *Cancer Res* (49):4682-89, 1989.
2. James RM, et al. *Mol Cancer Res* 1(11):820-5, 2003.
3. Lebedeva IV, et al. *Cancer Res* 66(4):2403-13, 2006.

RELATED PRODUCTS

Product	***Conjugate***	***Cat. No.***
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

Conjugate	***Goat anti-rabbit IgG (H+L)***	***Goat anti-mouse IgG (H+L)***	***Ex/Em****	***Fluorescence similar to--***
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

*Excitation/emission (nm); **Not applicable

For additional secondary antibody conjugates, visit www.invitrogen.com/antibodies

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