

Anti-K-Ras (Clone: 234-4.2)
Mouse monoclonal antibody
Reference: AP10351C



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INTENDED USE AND PRESENTATION:

For research use only.

AP10064C, 0.1 ml. Concentrated antibodies with carrier protein and preservative for stabilisation.

SUMMARY, EXPLANATION AND LIMITATIONS:

RAS superfamily comprises about 50 genes encoding related and the GTP binding domain (G protein) involved in signal transduction. Major genes are HRAS, NRAS and KRAS. Ras GTPase proteins are bound to the membrane which binds GDP inactivated form. Receptors are activated by tyrosine kinases such as EGFR, PDGFR receptor and fibroblast growth factor. These kinases Ras-GDP converted Ras-GTP is the active form of Ras. The single amino acid substitution in the sequence of the protein can activate Ras constitutively making this a highly oncogenic protein. Such mutations prolong Ras-GTP form. The consequence of this is the activation of the transduction pathway RAF1-MAPK. Ras mutations in the protein have been found in 10-15% of tumors. A particularly high incidence has been observed in pancreatic cancer, lung and colon.

Immunohistochemistry (IHC) is a complex technique in which immunological and histological detection methods are combined. In general, the manipulation and processing of tissues before immunostaining, especially different types of tissue fixation and embedding, as well as the nature of the tissues themselves may cause inconsistent results (Nadji and Morales, 1983). Endogenous pseudoperoxidase and peroxidase activity or endogenous biotin and alkaline phosphatase activity can cause non-specific staining results depending on the detection system used. Tissues that contain Hepatitis B surface antigen (HBsAg) can produce false positives when using HRP detection systems (Omata et al, 1980). Insufficient contrast staining and/or improper mounting of the sample may influence the interpretation of results.

Isotype: IgG2a kappa

Immunoegen: Recombinant fragment, corresponding to amino acids 54-189 of Rat Ras.

Staining pattern: Cell membrane.

The interpretation of the stain results is the full responsibility of the user. Any experimental result must be confirmed by a medically established diagnostic product or procedure.

Positive control: Tissue sample from skin or skin carcinoma.

External negative control: Tissue sample homologous to the test sample incubated with an antibody isotype not specific for K-Ras.

APPLICATIONS:

This antibody is designed for the specific localization of human K-Ras using IHC techniques in formalin-fixed, paraffin-embedded tissue sections.

PRODUCT COMPOSITION:

Mouse immunoglobulin IgG2a Kappa, clone 234-4.2, obtained

from culture supernatant. The preparation contains saline buffer, stabilising and carriers proteins, and sodium azide as a preservative.

METHODS AND PROCEDURE:

Principles of the procedure: The demonstrations of antigens by IHC is a sequential procedure with several steps involving first the application of a specific antibody for the antigen of interest (primary antibody), then a secondary antibody which joins to the first, an enzyme complex, and the addition of a chromogenic substrate. The sample is washed between each step. Enzymatic activation of the chromogenic substrate creates a visible product where the antigen is located. The results are interpreted using a light microscope. The primary antibody can be used both in manual IHC and with automated immunostainers.

Specimen: Paraffin-embedded tissue samples should be used. The antibody is also useful for immunostaining frozen tissue samples. Western blot techniques are not recommended.

Staining procedure:

Antigen retrieval	HIER Citrate Buffer pH 6.5
Working dilution (only for concentrates)	1:10 – 1:100
Incubation	30 min; RT
Control Tissue	Skin or skin carcinoma

Amplification and development of the immunostaining: Follow standard procedure and the recommendations given by the manufacturer for the materials used. In the case of using automated immunostainers, use the specified buffers and materials for each instrument.

See our web site at www.gennova-europe.com for detailed protocols ancillary reagents and support products.

REQUIRED MATERIALS BUT NOT SUPPLIED:

All reagents, materials, and laboratory equipment for IHC procedures are not provided with this antibody. This includes adhesive slides and cover slips, positive and negative control tissues, Xylene or adequate substitute, ethanol, distilled H₂O, heat pretreatment equipment (pressure cooker, steamer, microwave), pipettes, Coplin jars, glass jars, moist chamber, histological baths, negative control reagents, counter-staining solution, mounting materials, and microscope. Buffered solutions for antigen retrieval, enzyme treatments, highly sensitive detection systems, and other auxiliary reagents are available from Gennova Scientific.

STORAGE AND STABILITY:

Store at 2-8 °C until the expiration date printed on product label. Do not use after the expiration date. If fresh solutions are required, these must be prepared immediately prior to use, and will be stable for at least one day at room temperature (20-25°C). Unused portion of antibody preparation should be discarded after one day. If the product is stored under different conditions from those stipulated in these technical indications, the new conditions must be verified by the user. The validity period of the ready to use



Catalog number



Batch code



In Vitro diagnostic medical device



Temperature limitation



Expiration date



Manufacturer



See instruction for use



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products when opened, is the same as the expiration date indicated on the label of intact product.

Gennova Scientific guarantees that the product will maintain all of the described characteristics from the production date until the expiration date, as long as the product is stored and used as recommended. No other guarantees are provided. Under no circumstances is Gennova Scientific obliged to cover damages caused by use of this reagent.

TROUBLESHOOTING:

If unusual staining is observed or any other deviations from the expected results, please read these instructions carefully, along with the instructions from the detection system. If this does not solve the problem, please contact Gennova Scientific's technical support department or your local distributor.

PRECAUTIONS:

Use only by qualified personnel.

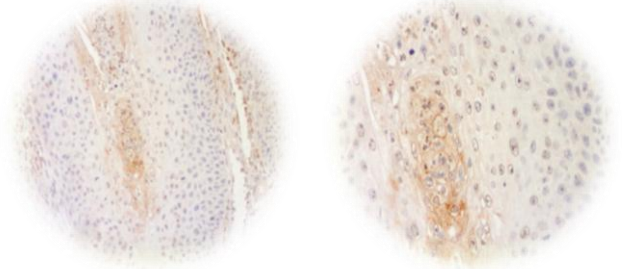
Use proper protective equipment in order to avoid contact with reagents and samples in the eyes, skin, and mucosal tissues. In case of contact with sensitive areas, immediately flush the affected area with water. Avoid microbial contamination of the reagent, as this may produce nonspecific staining results. This antibody contains sodium azide (NaN₃), used as a stabilising agent, which is not considered to be a hazardous material in the concentration used. Concentration of sodium azide in drainage pipes made of lead or copper can cause the formation of highly explosive metallic azides. In order to avoid this, sodium azide must be disposed of along with a large volume of running water. Material safety data sheet (MSDS) for pure sodium azide is available upon request.

PERFORMANCE CHARACTERISTICS:

Gennova Scientific has performed studies to evaluate the functioning of these antibodies for use with standard detection systems, concluding that the product is both specific and sensitive for the antigen of interest.

BIBLIOGRAPHY:

Bidgoli SA et al. Role of hormonal and environmental factors on early incidence of breast cancer in Iran. *Sci Total Environ* 408:4056-61 (2010).
Gazin C et al. An elaborate pathway required for Ras-mediated epigenetic silencing. *Nature* 449:1073-7 (2007).
Nadji M, Morales AR. Immunoperoxidase, part 1: the techniques and its pitfall. *Lab Med* 1983; 14:767-770.
Omata M, Liew CT, Ashcavai M, Peters RL. Nonimmunologic binding of horseradish peroxidase to hepatitis B surface antigen. A possible source of error in immunohistochemistry. *Am J Clin Pathol.* May, 1980;73(5):626-632.



10 ×

20 ×

IHC of K-Ras (clone 234-4.2) on FFPE squamous cell carcinoma of skin tissue.

Citrate pH 6.5; DAB; Hematoxylin

F01IT04_V2R1212_AP10064_English



Catalog number



Batch code



In Vitro diagnostic medical device



Temperature limitation



Expiration date



Manufacturer



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