

PRODUCT INFORMATION

K-Ras Isoform A (G12D mutant; human, recombinant)

Item No. 40372

Overview and Properties

Synonyms: c-K-ras(G12D), c-Ki-ras(G12D), K-Ras4A(G12D), Ki-Ras(G12D), Kirsten Rat Sarcoma Virus(G12D), KRAS(G12D)

Source: Recombinant human N-terminal His-tagged K-Ras(G12D) isoform A expressed in *E. coli*

Amino Acids: 2-186

Uniprot No.: P01116

Molecular Weight: 23 kDa

Storage: -80°C (as supplied)

Stability: ≥6 months

Purity: **batch specific** (≥90% estimated by SDS-PAGE)

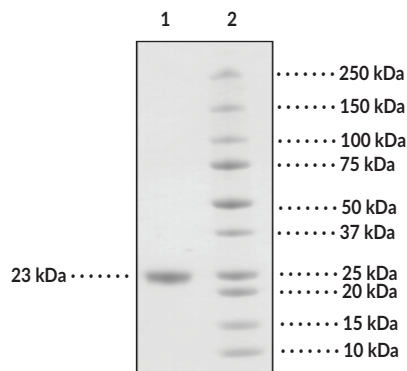
Supplied in: 20 mM HEPES, pH 7.4, 150 mM sodium chloride, 10% glycerol, and 1 mM dithiothreitol

Protein

Concentration: **batch specific** mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: K-Ras(G12D) Isoform A
Lane 2: MW Markers

SDS-PAGE Analysis of K-Ras(G12D) Isoform A.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

K-Ras is a small GTPase and member of the RAS family of GTPases with roles in apoptosis, as well as cell proliferation, survival, and migration.^{1,2} K-Ras is composed of a guanine nucleotide-binding domain containing an active site, an effector binding domain, and an isoform-specific C-terminal hypervariable region (HVR) that differs between K-Ras isoforms A and B due to alternative splicing.^{1,3,4} The active site cycles between GDP-bound inactive and GTP-bound active states and is regulated by its associations with GTPase-activating proteins (GAPs) or guanine nucleotide exchange factors (GEFs).^{3,5} K-Ras is ubiquitously expressed and is tethered to the intracellular side of cell membranes via farnesyl and palmitoyl lipidation and to negatively charged or neutral regions of the membrane via a single polybasic region in the HVR.^{1,6,4} K-Ras(G12D), which contains a glycine-to-aspartic acid substitution at position 12, is constitutively active and associated with pancreatic, colon, and lung cancers.⁷ Inhibition of K-Ras(G12D) with the inhibitory peptide KS-58 reduces tumor volume in a PANC-1 pancreatic cancer mouse xenograft model.⁸ Tumor levels of K-Ras(G12D) are increased in patients with lung adenocarcinoma who had never smoked.⁹ Cayman's K-Ras Isoform A (G12D mutant; human, recombinant) protein consists of 185 amino acids and has a calculated molecular weight of 23 kDa.

References

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