PRODUCT INFORMATION

K-Ras(G12V) Isoform B (human, recombinant)

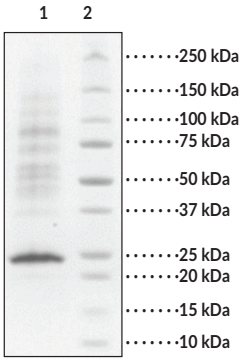
Item No. 40373

Overview and Properties

Synonyms:	c-K-ras(G12V), c-Ki-ras(G12V), K-Ras4A(G12V), Ki-Ras(G12V), Kirsten Rat Sarcoma Virus(G12V)
Source:	Recombinant human N-terminal His-tagged K-Ras(G12V) isoform B expressed in insect cells
Amino Acids:	2-185
Uniprot No.:	P01116
Molecular Weight:	22 kDa
Storage:	-80°C (as supplied)
Stability:	≥6 months
Purity:	≥53% estimated by SDS-PAGE
Supplied in:	40 mM Tris-HCl, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, 0.04% Tween20, 20% glycerol, 3 mM DTT, and 120 mM imidazole
Protein Concentration:	***batch specific*** mg/ml

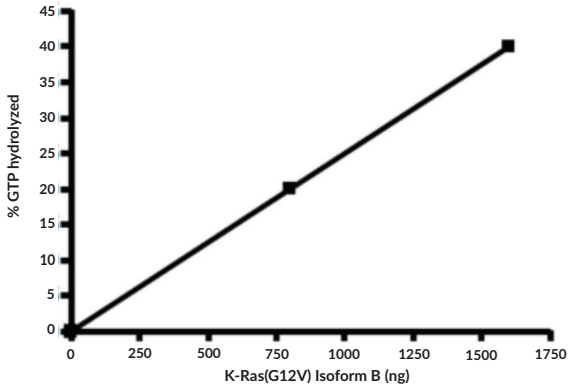
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: K-Ras(G12V) Isoform B
Lane 2: MW Markers

SDS-PAGE Analysis of K-Ras(G12V) Isoform B



Intrinsic GTPase activity of K-Ras(G12V) Isoform B.

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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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 isoform B is ubiquitously expressed and is tethered to the intracellular side of cell membranes *via* farnesyl lipidation and to negatively charged regions of the membrane *via* two positively charged polybasic regions in the HVR.[1,4,6] K-Ras(G12V), which contains a glycine-to-valine substitution at position 12, is constitutively active and associated with pancreatic, colon, and lung cancers.[7] Tumor levels of K-Ras(G12V) are negatively correlated with overall survival in patients with colorectal cancer.[4] Cayman's K-Ras(G12V) Isoform B (human, recombinant) protein consists of 184 amino acids, has a calculated molecular weight of 22 kDa, and can be used for enzyme activity assay, inhibitor screening, and inhibitor selectivity profiling applications.

References

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6. Salim, A.A., Tan, L., Huang, X.-C., *et al.* Oligomycins as inhibitors of K-Ras plasma membrane localisation. *Org. Biomol. Chem.* **14(2),** 711-715 (2016).
7. Prior, I.A., Lewis, P.D., and Mattos, C. A comprehensive survey of Ras mutations in cancer. *Cancer Res.* **72(10),** 2457-2467 (2012).

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