

# Human KRAS (G12S) Protein, His Tag (HPLC-verified) (active enzyme)

Catalog # KRS-H5144



BIOSYSTEMS  
**Acro**  
Surprise Inside!

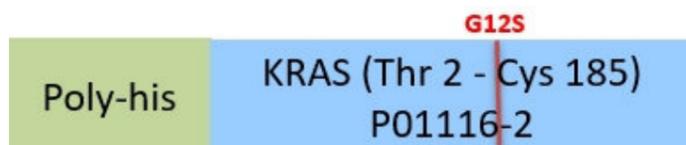
## Synonym

GTPase Kras, K-Ras 2, Ki-Ras, c-K-ras, c-Ki-ras, KRAS2, RASK2, C-K-RAS, CFC2, K-RAS2A, K-RAS2B, K-RAS4A, K-RAS4B, KI-RAS, KRAS1, KRAS2, NS, NS3, RASK2, KRAS

## Source

Human KRAS (G12S) Protein, His Tag (KRS-H5144) is expressed from E. coli cells. It contains AA Thr 2 - Cys 185 (Accession # [P01116-2](#) (G12S)).

## Molecular Characterization



This protein carries a polyhistidine tag at the N-terminus.

The protein has a calculated MW of 23.0 kDa. The protein migrates as 27-28 kDa under reducing (R) condition (SDS-PAGE).

## Endotoxin

Less than 1.0 EU per  $\mu\text{g}$  by the LAL method.

## Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-HPLC.

## Formulation

Lyophilized from 0.22  $\mu\text{m}$  filtered solution in 20 mM Tris, 500 mM NaCl, pH 7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

## Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

## Storage

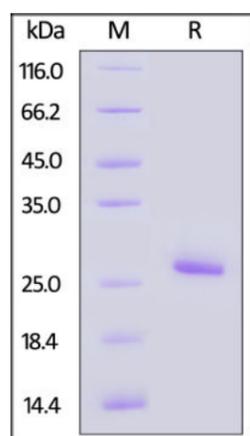
For long term storage, the product should be stored at lyophilized state at  $-20^{\circ}\text{C}$  or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$  for 12 months in lyophilized state;
- $-70^{\circ}\text{C}$  for 3 months under sterile conditions after reconstitution.

## SDS-PAGE

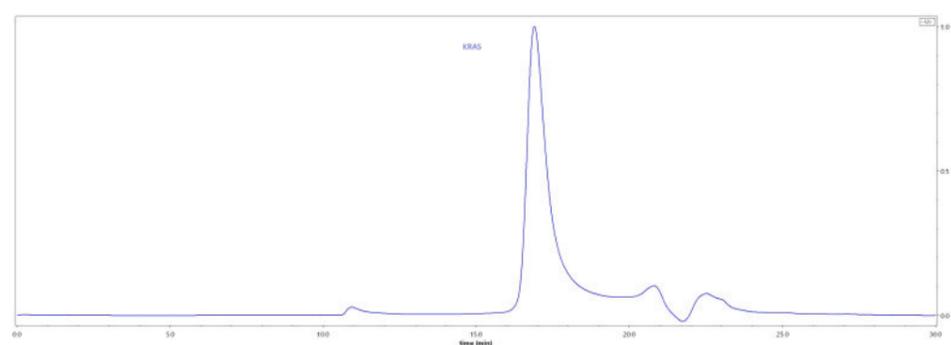


Human KRAS (G12S) Protein, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

## Bioactivity

The specific activity of KRAS was determined to be  $> 350$  pmol/min/mg in a GTPase-Glo assay using GTP solution substrate (QC tested).

## SEC-HPLC



The purity of Human KRAS (G12S) Protein, His Tag (Cat. No. KRS-H5144) was greater than 90% as determined by SEC-HPLC.

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## Background

KRAS (Kirsten rat sarcoma 2 viral oncogene homolog) gene is a proto-oncogene that encodes a small GTPase transducer protein called KRAS. KRAS is also known as Ki-Ras, c-K-ras and c-Ki-ras. Ras proteins bind GDP/GTP and possess intrinsic GTPase activity. Plays an important role in the regulation of cell proliferation, promoting oncogenic events by inducing transcriptional silencing of tumor suppressor genes (TSGs) in colorectal cancer (CRC) cells in a ZNF304-dependent manner. RAS is one of the most frequently mutated oncogenes in human cancer but the frequency and distribution of RAS gene mutations are not uniform. In details, mutation of glycine 12 (G13) causes RAS activation by interfering with GAP binding and GAP-stimulated GTP hydrolysis. The reference shows the pathway may as a potential therapy targets.

## Clinical and Translational Updates

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