KRAS (G12D), Isoform A, His-Tag, GppNHp-Loaded Recombinant

Catalog: 101481
Lot: 240104

Product Information

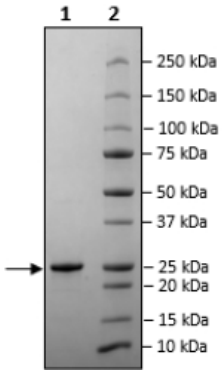
Description:	Recombinant human KRAS (KRAS proto-oncogene GTPase), isoform a, encompassing amino acids 2-186(end). This construct contains an N-terminal His-tag (6xHis) followed by an optimal TEV protease target sequence (TEV: tobacco etch virus cysteine protease BPS Bioscience #50308). The protein also contains mutation of interest G12D. The protein was affinity purified and loaded with GppNHp, a non-hydrolyzable GTP analog. Unbound GppNHp was removed by spin column. Ready for use in KRAS-RAF binding studies or inhibitor assays.
Background:	RAS mutations are responsible for more than 30% of human cancers with KRAS(G12D) being one of the KRAS mutations that is found frequently in pancreatic and colon cancers. Recent studies have led to the discovery of small molecules, such as MRTX-1133, able to lock KRAS conformation in the inactive GDP-bound state, thereby blocking the KRAS(G12D)-mediated signaling pathway. The development of compounds that affect the nucleotide exchange (GDP to GTP) reaction in KRAS is one of the approaches that may inhibit tumor cell growth in KRAS(G12D)-driven tumors. The KRAS (Kirsten rat sarcoma virus) gene is subject to alternative splicing, resulting in two isoforms: KRAS-A and KRAS-B. These isoforms differ by amino acids 151, 153, 165, and 166 and within the hypervariable region (amino acids 167-189). KRAS-B contains a long polybasic stretch, while KRAS-A has a shorter polybasic region with a palmitoylation site. These differences confer distinct biological characteristics to the two isoforms. When studying a mutant of KRAS, it is important to know which isoform is being studied to make sure that the correct wild-type isoform is used for comparison. The identification of new strategies targeting KRAS G12V will bring large benefits in cancer therapy.
Species:	Human
Construct:	KRAS (G12D) (His-TEV-2-186)-(GppNHp)
Mutation:	G12D
Concentration:	1.29 mg/ml
Expression System:	*E. coli*
Purity:	≥90%
Format:	Aqueous buffer solution.
Formulated In:	20 mM HEPES, pH 7.4, 150 mM NaCl, and 1 mM DTT
MW:	23 kDa
Genbank Accession:	NM_033360
Stability:	At least 6 months at -80°C.
Storage:	-80°C
Instructions for Use:	Thaw on ice and gently mix prior to use. DO NOT VORTEX. Perform a quick spin before opening. Aliquot into small volumes and flash freeze for long term storage. Avoid multiple freeze/thaw cycles.
Assay Conditions:	KRAS (G12D) GppNHp-loaded was tested for binding to the RBD of RAF1. KRAS (G12D) GppNHp-loaded was compared with KRAS (G12D) GDP-loaded (BPS Bioscience #101312) for c-RAF, GST-Tag Recombinant (BPS Bioscience #100519) binding with AlphaScreening Glutathione Acceptor beads (PerkinElmer #AL109C) and Nickel Chelate Donor beads (PerkinElmer #AS101D).
Applications:	Useful for KRAS-RAF (rapidly accelerated fibrosarcoma) binding studies or inhibitor assays.

KRAS (G12D), Isoform A, His-Tag, GppNHp-Loaded Recombinant

Catalog: 101481
Lot: 240104

Quality Control Data

4-20% SDS-PAGE Coomassie Staining



KRAS (G12D), GppNHP-Loaded Activity