Human GTPase HRAS, C-His Tag Protein

HA211122

Product name:	Human GTPase HRAS, C-His Tag
Species reactivity:	Human
Bio-Activity:	Testing in progress.
Protein construction description:	A DNA sequence encoding the human GTPase HRAS protein (P01112) (Met 1-Gly 180) was expressed with a His tag at the C-terminus.

Background: GTPase HRas, from "Harvey Rat sarcoma virus", also known as transforming protein p21 is an enzyme that in humans is encoded by the HRAS gene. The HRAS gene is located on the short (p) arm of chromosome 11 at position 15.5, from base pair 522,241 to base pair 525,549. HRas is a small G protein in the Ras subfamily of the Ras superfamily of small GTPases. Once bound to Guanosine triphosphate, H-Ras will activate a Raf kinase like c-Raf, the next step in the MAPK/ERK pathway. GTPase HRas is involved in regulating cell division in response to growth factor stimulation. Growth factors act by binding cell surface receptors that span the cell's plasma membrane. Once activated, receptors stimulate signal transduction events in the cytoplasm, a process by which proteins and second messengers relay signals from outside the cell to the cell nucleus and instructs the cell to grow or divide. The HRAS protein is a GTPase and is an early player in many signal transduction pathways and is usually associated with cell membranes due to the presence of an isoprenyl group on its C-terminus. HRAS acts as a molecular on/off switch, once it is turned on it recruits and activates proteins necessary for the propagation of the receptor's signal, such as c-Raf and PI 3-kinase. HRAS binds to GTP in the active state and possesses an intrinsic enzymatic activity that cleaves the terminal phosphate of this nucleotide converting it to GDP. Upon conversion of GTP to GDP, HRAS is turned off. The rate of conversion is usually slow but can be sped up dramatically by an accessory protein of the GTPase activating protein (GAP) class, for example RasGAP. In turn HRAS can bind to proteins of the Guanine Nucleotide Exchange Factor (GEF) class, for example SOS1, which forces the release of bound nucleotide. Subsequently, GTP present in the cytosol binds and HRAS-GTP dissociates from the GEF, resulting in HRAS activation. HRAS is in the Ras family, which also includes two other proto-oncogenes: KRAS and NRAS. These proteins all are regulated in the same manner and appear to differ largely in their sites of action within the cell.

Purity:	>95% as determined by SDS-PAGE.
Endotoxin:	Less than 1.0 EU per μg by the LAL method.
Fragment region:	GTPase HRAS (1-180)
Source:	E.coli
Accession:	P01112
Predicted molecular mass:	22.7 kD
Formulation:	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, 5% Trehalose, 5% mannitol.
Reconstitution:	Reconstitute at 250 μg/ml in sterile water.
Storage:	Please avoid repeated freeze-thaw cycles. Samples are stable for up to twelve months from date of receipt at -20℃ to -80℃ It is recommended that aliquot the reconstituted solution to minimize freeze-thaw cycles.

Images

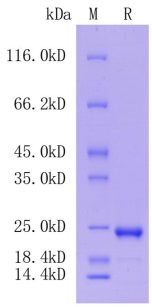

Fig1: Protein on SDS-PAGE under reducing (R) condition.

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