

Product datasheet

Recombinant Human Rac1 protein ab51014

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Overview

Product name	Recombinant Human Rac1 protein
Protein length	Full length protein

Description

Nature	Recombinant
Source	Escherichia coli

Amino Acid Sequence

Species	Human
Sequence	MQAIKCVVVG DGAVGKTCLLISYTTNAFPGEYIPTVFDNYSANVMVDGKP VNLGLWDTAGQEDYDRLRPLSYPQTDVFLICFSLVSPASFENVRAKWYPE VRHHCPNTPILVGTKLDLRDDKDTIEKLKEKCLTPITYPQGLAMAKEIG AVKYLECSALTQRGLKTVFDEAIRAVLCPPPVKKRKRKCLLL
Amino acids	1 to 192

Specifications

Our [Abpromise guarantee](#) covers the use of **ab51014** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Purity	> 95 % SDS-PAGE.
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Form	Liquid
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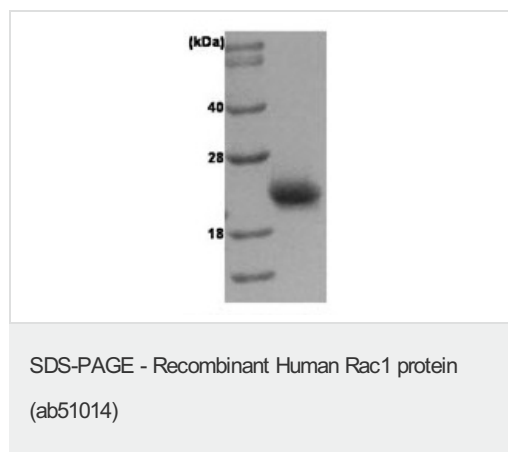
Preparation and Storage

Stability and Storage	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles. Preservative: None Constituents: 20mM Tris HCl, 2mM EDTA, 1mM DTT, pH 7.5
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General Info

Function	Plasma membrane-associated small GTPase which cycles between active GTP-bound and inactive GDP-bound states. In its active state, binds to a variety of effector proteins to regulate cellular responses such as secretory processes, phagocytosis of apoptotic cells, epithelial cell polarization and growth-factor induced formation of membrane ruffles. Rac1 p21/rho GDI heterodimer is the active component of the cytosolic factor sigma 1, which is involved in stimulation of the NADPH oxidase activity in macrophages (By similarity). Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. Isoform B has an accelerated GEF-independent GDP/GTP exchange and an impaired GTP hydrolysis, which is restored partially by GTPase-activating proteins. It is able to bind to the GTPase-binding domain of PAK but not full-length PAK in a GTP-dependent manner, suggesting that the insertion does not completely abolish effector interaction.
Tissue specificity	Isoform B is predominantly identified in skin and epithelial tissues from the intestinal tract. Its expression is elevated in colorectal tumors at various stages of neoplastic progression, as compared to their respective adjacent tissues.
Sequence similarities	Belongs to the small GTPase superfamily. Rho family.
Domain	The effector region mediates interaction with DEF6.
Post-translational modifications	AMPylation at Tyr-32 and Thr-35 are mediated by bacterial enzymes in case of infection by <i>H.somnus</i> and <i>V.parahaemolyticus</i> , respectively. AMPylation occurs in the effector region and leads to inactivation of the GTPase activity by preventing the interaction with downstream effectors, thereby inhibiting actin assembly in infected cells. It is unclear whether some human enzyme mediates AMPylation; FICD has such ability in vitro but additional experiments remain to be done to confirm results in vivo.
Cellular localization	Cell membrane. Melanosome. Inner surface of plasma membrane possibly with attachment requiring prenylation of the C-terminal cysteine (By similarity). Identified by mass spectrometry in melanosome fractions from stage I to stage IV.

Images



15% SDS-PAGE analysis of 3 µg ab51014.

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