

Rap1 Activation Assay Kit ab212011

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Overview

Product name	Rap1 Activation Assay Kit
Sample type	Tissue, Adherent cells, Suspension cells
Species reactivity	Reacts with: Mouse, Rat, Human
Product overview	Rap1 Activation Assay Kit (ab212011) uses RalGDS RBD Agarose beads to selectively isolate and pull-down the active form of Rap from purified samples or endogenous lysates. Subsequently, the precipitated GTP-Rap is detected by western blot analysis using an anti-Rap1 polyclonal antibody, which reacts with the human, mouse and rat Rap1A and Rap1B proteins.

Features: 1) non radioactive assay format; 2) fast results: 1 hour assay plus electrophoresis/blotting time; 3) includes Cdc42 positive control; 4) pink colored agarose beads for easy identification during washing and aspiration steps.

Notes

Small GTP-binding proteins (or GTPases) are a family of proteins that serve as molecular regulators in signaling transduction pathways.

Rap1 (Ras-related protein 1), a 21 kDa protein of the Ras superfamily, exhibits 60% identity to Rap2. Rap2 regulates a variety of biological response pathways that include cell migration, cell adhesion, and embryonic blood vessel formation. Like other small GTPases, Rap1 regulates molecular events by cycling between an inactive GDP-bound form and an active GTP-bound form. In its active (GTP-bound) state, Rap1 bind specifically to the Rap-binding domain (RBD) of RalGDS to control downstream signaling cascades.

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Properties

Storage instructions Store at -20°C. Please refer to protocols.

Components	20 tests
100X GDP	1 x 50µl

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100X GTPyS	1 x 50µl
5X Assay/Lysis Buffer	1 x 30ml
ab211179 - RaIGDS RBD Agarose Beads	1 x 800µl
Anti-Rap1 Goat polyclonal antibody	1 x 40µl
GTPase immunoblot Positive Control	1 x 100µl

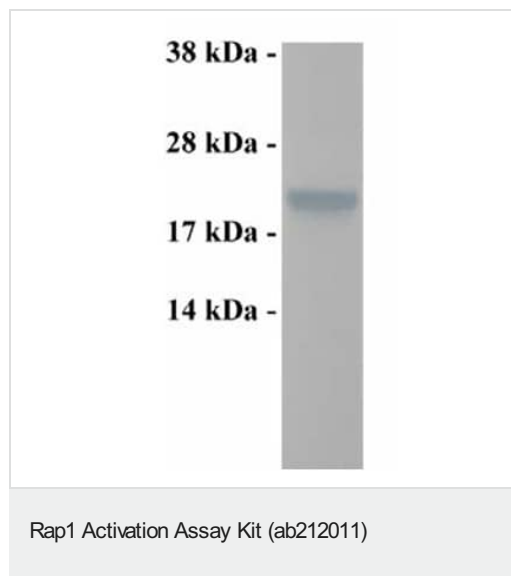
Relevance

RAP1A and RAP1B belong to a family of RAS-related proteins. These proteins share approximately 50% amino acid identity with the classical RAS proteins and have numerous structural features in common. The most striking difference between the RAP and RAS proteins resides in their 61st amino acid: glutamine in RAS is replaced by threonine in RAP proteins. Human RAP1B is 95% identical to RAP1A. RAP1A and B are proposed to regulate Ras-mediated signalling and may also be involved in the regulation of integrin-mediated cell adhesion, although the mechanism of regulation is not known.

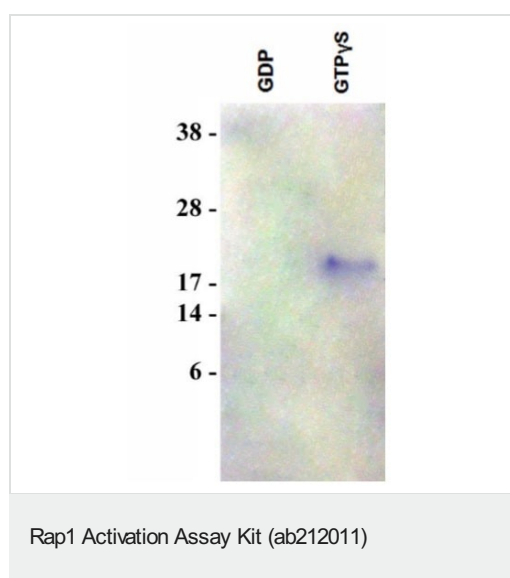
Cellular localization

Cell Membrane; Attached to the membrane by a lipid anchor

Images



Rap1 positive control (10 µL of NIH3T3 cell lysate at 0.75 mg/mL) detected by immunoblot.



Rap1 activation assay. Lane 1: NIH 3T3 cell lysate loaded with GDP and incubated with RalGDS RBD Agarose beads. Lane 2: NIH 3T3 cell lysate loaded with GTP γ S and incubated with RalGDS RBD Agarose beads.

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