

Rac2 Protein, Human, Recombinant (His)

General Information

Synonyms:	p21-Rac2;HSPC022;Gx;EN-7;ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
Protein Construction:	A DNA sequence encoding the human RAC2 (P15153) (Met 1-Cys 189) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P15153
Molecular Weight:	22.6 kDa (predicted); 25 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 94 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Supplied as sterile PBS, 20% glycerol, pH 7.5.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Ras-related C3 botulinum toxin substrate 2 (Rac2) is a small G-protein belonging to the Ras subfamily of the GTPase family. Rac2 acts as an "on / off" switch for signal transduction cascades and motilities. When GDP is attached to the small G-protein, the enzyme is inactivated. Release of the GDP and replace of the GTP activate the GTPase. Rac2 remains active until the GTP is hydrolyzed to GDP. Rac2 is a hematopoietic-specific Rho family GTPase implicated as an important constituent of the NADPH oxidase complex and shares 92% amino acid identity with the ubiquitously expressed Rac1. The small G-protein Rac2 regulates the rearrangements of actin and membrane necessary for Fcγ receptor-mediated phagocytosis by macrophages. Activated Rac2 binds to the p21-binding domain of PAK1 and this binding provided a basis for microscopic methods to localize activation of these

G proteins inside cells.

Reference

Adam D, et al. (2003) Cdc42, Rac1, and Rac2 Display Distinct Patterns of Activation during Phagocytosis. *Mol Biol Cell*. 15 (8): 3509-19.

Walmsley MJ, et al. (2003) Critical Roles for Rac1 and Rac2 GTPases in B Cell Development and Signaling. *Science*. 302 (5644): 459-62.

Holland M, et al. (2011) RAC2, AEP, and ICAM1 expression are associated with CNS disease in a mouse model of pre-B childhood acute lymphoblastic leukemia. *Blood*. 118 (3): 638-49.

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