

**Rac1 ΔC**

Ras-related C3 botulinum toxin substrate 1, residues 1-187
human, recombinant, *E. coli*

Cat. No.	Amount
PR-303	50 µg

For general laboratory use.

Shipping: shipped on dry ice

Storage Conditions: store at -80 °C

Additional Storage Conditions: avoid freeze/thaw cycles

Shelf Life: 12 months

Molecular Weight: 20.9 kDa (187 amino acids)

Accession number: BT007121

Purity: > 90 % (SDS-PAGE)

Form: liquid (Supplied in 30 mM Tris-HCl pH 7.0 and 5 mM DTE)

Description:

Rho family GTPases Rac1 and Cdc42 belong to the Ras superfamily of small GTP-binding proteins. Rac1 is involved in regulation of a variety of signal transduction processes, ranging from cell growth to cytoskeletal organisation required for cell motility and cell adhesion. It has been shown that Rac1 is inhibited by 6-thioguanine triphosphate (6-Thio-GTP), a metabolite generated by the immunosuppressive and anti-inflammatory drug Azathioprine. In intestinal epithelial cells the pro-inflammatory mediator Leukotriene D₄ induces Rac-dependent migration via 10-fold increase of Rac activation. The C-terminal deletion of five amino acids of Rac1ΔC (aa 1 - 187) includes arginine 188 which is part of the polybasic domain consisting of six contiguous basic amino acids. Deletion or mutation of the polybasic residues decrease the intrinsic GTPase activity and result in a loss of the self-stimulatory GAP activity. Protein preparation is 100% GDP-loaded, measured by HPLC.

Selected References:

Paruchuri *et al.* (2005) The Pro-inflammatory Mediator Leukotriene D₄ induces Phosphatidylinositol 3-Kinase and Rac-dependent Migration of Intestinal Epithelial Cells. *J. Biol. Chem.* **280**:13538.

Zhang *et al.* (2001) Oligomerization of Rac1 GTPase mediated by carboxy-terminal polybasic domain. *J. Biol. Chem.* **276**:8958.

Knaus *et al.* (1998) Structural requirements for PAK activation by Rac GTPases. *J. Biol. Chem.* **273**:21512.

Tiede *et al.* (2003) CD28-dependent Rac1 activation is the molecular target of azathioprine in primary human CD4⁺ T lymphocytes. *J. Clin. Invest.* **111**:1133.

Chamberlain *et al.* (2004) The p85α Subunit of Phosphatidylinositol 3-Kinase Binds to and Stimulates the GTPase Activity of Rab Proteins. *J. Biol. Chem.* **279** (47):48607.