

## Active Rac1 Expression Vector Set

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**CATALOG NUMBER:** STA-458

**STORAGE:** -80°C

**QUANTITY AND CONCENTRATION:** 3 vectors; each 100 µl of bacterial glycerol stock.

### Components

1. pRK5-myc-Rac1 Q61L (Part No. 345801): One tube
2. pRK5-myc-Rac1 Q61L F37A (Part No. 345802): One tube
3. pRK5-myc-Rac1 Q61L Y40C (Part No. 345803): One tube

### Background

Three members of the Rho family small GTPase, Rho, Rac, and Cdc42, have been shown to play a crucial role in regulating the organization of the actin cytoskeleton in response to extracellular stimuli. Activation of Rho, Rac, and Cdc42 in quiescent Swiss 3T3 fibroblasts induces the assembly of filamentous actin into stress fibers, lamellipodia, and filopodia, respectively. In addition to these effects on the actin cytoskeleton, it has been shown Rac and Cdc42 (and in some cells Rho) can activate JNK and p38 that leads to transcriptional activation. In fibroblast cells, Rho, Rac, and Cdc42 have each been implicated in cell cycle control.

The small GTPase gene from human is cloned in pRK5 expression vector with a Myc tag at its N-terminus.

### References

1. Morgenstern, J. P. and H Land. (1990) *Nuc. Acid Res.* 18, 3587-3596.
2. Schuck S, Manninen A, Honsho M, Fullekrug J and Simons K. (2004) *Proc Natl Acad Sci U S A.* 101, 4912-4917.
3. Machesky L. M. and Hall A. (1996) *Trends Cell Biol.* 6:304-10.

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## **Contact Information**

Cell Biolabs, Inc.

7758 Arjons Drive

San Diego, CA 92126

Worldwide: +1 858-271-6500

USA Toll-Free: 1-888-CBL-0505

E-mail: [tech@cellbiolabs.com](mailto:tech@cellbiolabs.com)

[www.cellbiolabs.com](http://www.cellbiolabs.com)

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