

## GFP-Rac1 Expression Vector Set

**CATALOG NUMBER:** STA-450

**STORAGE:** -80°C

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

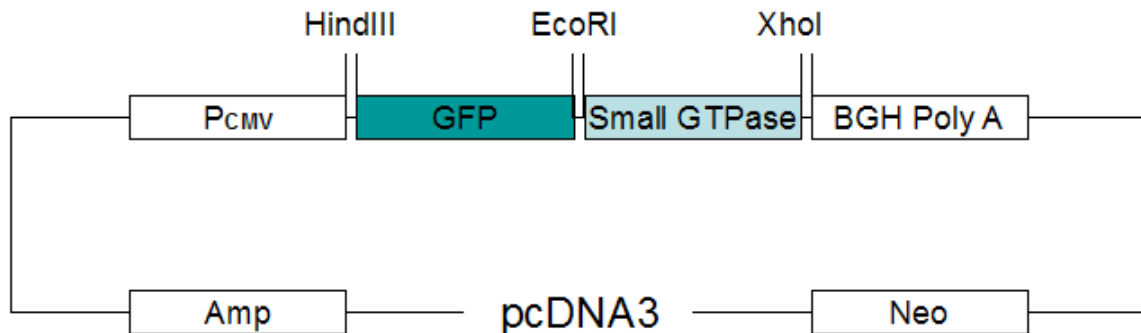
### Components

1. pcDNA3-GFP-Rac1 (Wild Type) (Part No. 345001): One tube
2. pcDNA3-GFP-Rac1 T17N (Dominant Negative) (Part No. 345002): One tube
3. pcDNA3-GFP-Rac1 Q61L (Constitutively Active) (Part No. 345003): 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 fused with GFP in the pcDNA3 expression vector (Figure 1).



**Figure 1.** pcDNA3 Expression Vector Map of GFP-Rac1

### 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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