

Active H-Ras Expression Vector Set

CATALOG NUMBER: STA-459

STORAGE: -80°C

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

Components

1. pcDNA3-H-Ras V12 (Part No. 345901): One tube
2. pcDNA3-H-Ras V12S35 (Part No. 345902): One tube
3. pcDNA3-H-Ras V12C40 (Part No. 345903): One tube

Background

Ras genes encode 21 kDa guanine nucleotide-binding proteins, including H-, K- and N-Ras. H-Ras was first identified as oncogene, mutated Ras genes have been found in many human tumors. Like all GTPases, Ras act as molecular switch to control downstream cellular events. The interconversion of the inactive GDP-bound form into the active GTP-bound form is regulated by guanine nucleotide exchange factors, whereas inactivation of the GTP-bound form is stimulated by GTPase-activating proteins (GAPs). Ras in its active GTP bound form binds to Raf, resulting in activation of MAP kinase cascade. In mammals, Ras functions through a multiplicity of effectors. The use of effector loop mutants of Ras has shown that three effectors account for many, if not all, Ras functions: phosphatidylinositol 3-kinase (PI3K; a preferred effector of the Ras Y40C allele), Raf (a preferred effector of the Ras T35S allele), and Ral guanine nucleotide exchange factors (Ral GEFs; preferred effectors of the Ras E37G allele).

The small GTPase gene from human is cloned in pcDNA3 expression vector (Figure 1).

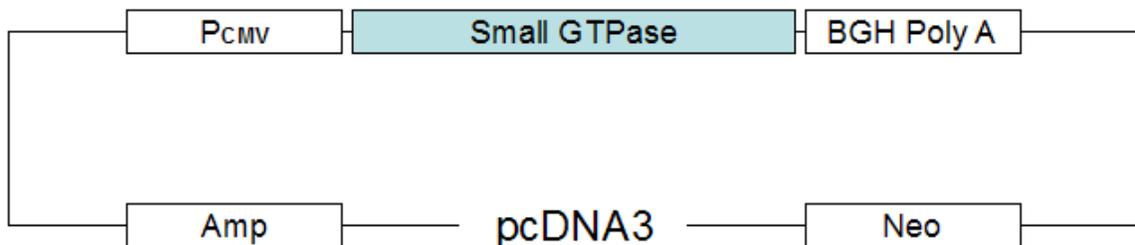


Figure 1. pcDNA3-H-Ras Expression Vector Map

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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