

Product Information

Farnesyltransferase from *Saccharomyces cerevisiae*, recombinant expressed in *Escherichia coli*

Catalog Number **F0175**
Storage Temperature $-70\text{ }^{\circ}\text{C}$

Product Description

Farnesyltransferase is the enzyme responsible for post-translational modification of a number of proteins involved in cell growth by the addition of a 15-carbon farnesyl isoprenoid.¹ The most notable of these is the Ras family of small GTP binding proteins. All protein farnesyltransferase acceptor proteins contain a unique C-terminal sequence termed the "CaaX-box" (where "C" is the cysteine which is prenylated, "a" is any aliphatic amino acid, and "X" is the C-terminal amino acid). Great interest in farnesyltransferase has been generated because inhibition of this enzyme inhibits Ras related oncogenesis by preventing the localization of Ras to the plasma membrane.

Farnesyltransferase from the yeast *Saccharomyces cerevisiae* is the product of two genes,² *ram2* codes for the α -subunit (38 kDa) and *ram1* (or *dpr1*) codes for the β -subunit (49 kDa).

The recombinant protein supplied is a heterodimer with an additional four amino acid (QEEF) epitope tag added at the C-terminus of the α -subunit.³ In addition, the β -subunit appears as two protein bands (45 and 48 kDa), the shorter band is the product of translation initiation at an internal ATG codon. The enzyme may be used to study inhibitors of protein farnesylation or as a reagent for adding a farnesyl group to proteins containing the CaaX motif.

The product is supplied as a solution in 50 mM HEPES-Na, pH 7.5, with 50 mM NaCl, 1 mM DTT, 0.5% CHAPS, and 10 % glycerol.

Purity: $\geq 90\%$ (SDS-PAGE)

Specific activity: $\geq 500,000$ units/mg protein

Unit definition: One unit will transfer 1.0 picomole of farnesyl from farnesyl pyrophosphate to H-Ras per hour at pH 7.5 at $30\text{ }^{\circ}\text{C}$.

The assay reaction mixture contains 75 mM potassium phosphate, pH 7.5, 7.5 mM DTT, 15 mM MgCl_2 , 30 μM H-Ras (Catalog Number R9894), 3 μM farnesyl pyrophosphate (Catalog Number F6892), and 3.75 $\mu\text{Ci/ml}$ [^3H]-farnesyl pyrophosphate. The farnesyltransferase is diluted with 50 mM HEPES-Na, pH 7.5, with 50 mM NaCl and 1 mM DTT.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For long term storage, store the product at $-70\text{ }^{\circ}\text{C}$. It may be stored up to 3 months at $-20\text{ }^{\circ}\text{C}$ and up to 24 hours at $2-8\text{ }^{\circ}\text{C}$.

References

1. Seabra, M.C. et al., *Cell*, **65**, 429-434 (1991).
2. He, B. et al., *Proc. Natl. Acad. USA*, **88**, 11373-11377 (1991).
3. Mayer, M.P. et al., *Gene*, **132**, 41-47 (1993).
4. Omer, C.A., and Gibbs, J.B., *Mol. Microbiol.*, **11**, 219-225 (1994).

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