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# Geranylgeranyl Transferase

National Cancer Institute

## Source

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Alpha-beta heterodimeric human GGTase-I transfers a geranylgeranyl moiety to the Cys of a C-terminal CAAX motif in candidate proteins as a means of membrane localization. The conserved 48-kDa alpha subunit of GGTase-I is identical to the alpha subunit (FNTA) of Farnesyl Protein Transferase. The conserved 42-kDa Protein Geranylgeranyltransferase Type I Beta Subunit (PGGT1B Gene), containing 4 PFTB repeats, is distinct from the beta subunit (FNTB) of Farnesyl Protein Transferase; FNTB and PGGT1B are catalytic for specific substrates. The mammalian counterpart of CDC43 (*S. cerevisiae*) and responsible for peptide binding, PGGT1B acts on Rac1, Rac2, Rap1A, and Rap1B. Interacting with TGF-beta and Activin Type I receptors, FNTA is likely a key component of p21ras signaling, a farnesyltransferase substrate. (NCI)