

Publication**A C-terminally-anchored Golgi protein is inserted into the endoplasmic reticulum and then transported to the Golgi apparatus****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 153383**Author(s)** Linstedt, A D; Foguet, M; Renz, M; Seelig, H P; Glick, B S; Hauri, H P**Author(s) at UniBasel** [Hauri, Hans-Peter](#) ;**Year** 1995**Title** A C-terminally-anchored Golgi protein is inserted into the endoplasmic reticulum and then transported to the Golgi apparatus**Journal** Proceedings of the National Academy of Sciences of the United States of America**Volume** 92**Number** 11**Pages / Article-Number** 5102-5**Keywords** Amino Acid Sequence; Binding Sites; Carcinoma; Hepatocellular; Cell Line; Endoplasmic Reticulum/*metabolism/ultrastructure; Golgi Apparatus/*metabolism/ultrastructure; Humans; Liver Neoplasms; Membrane Proteins/biosynthesis/isolation & purification/*metabolism; Molecular Sequence Data; *Protein Processing; Post-Translational; Recombinant Proteins/biosynthesis/isolation & purification/metabolism; Sequence Deletion; Transfection; Tumor Cells; Cultured

Unlike conventional membrane proteins of the secretory pathway, proteins anchored to the cytoplasmic surface of membranes by hydrophobic sequences near their C termini follow a posttranslational, signal recognition particle-independent insertion pathway. Many such C-terminally-anchored proteins have restricted intracellular locations, but it is not known whether these proteins are targeted directly to the membranes in which they will ultimately reside. Here we have analyzed the intracellular sorting of the Golgi protein giantin, which consists of a rod-shaped 376-kDa cytoplasmic domain followed by a hydrophobic C-terminal anchor sequence. Unexpectedly, we find that giantin behaves like a conventional secretory protein in that it inserts into the endoplasmic reticulum (ER) and then is transported to the Golgi. A deletion mutant lacking a portion of the cytoplasmic domain adjacent to the membrane anchor still inserts into the ER but fails to reach the Golgi, even though this mutant has a stable folded structure. These findings suggest that the localization of a C-terminally-anchored Golgi protein involves at least three steps: insertion into the ER membrane, controlled incorporation into transport vesicles, and retention within the Golgi.

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