コイルド・コイルタンパク質による小胞輸送調節機構の解析

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ANALYSIS FOR THE REGULATORY MECHANISM OF THE VESICULAR TRANSPORT BY COILED-COIL PROTEINS

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Research Abstract

The localization mechanisms of GM130 and its presumed receptor, GRASP65 to the Golgi apparatus were investigated. (1) By pulse-chase subcellular fractionation experiments using <35>^S-methionin, it was revealed that GM130 amd GRASP65 localize to the Golgi apparatus soon after the synthesis. (2) Morphological analysis revealed that newly synthesized GM130 and GRASP65 were localized to the Golgi apparatus under the condition the transport form the ER to the Golgi apparatus was inhibited by the microinjection of mutant Sarlp. (3) In vitro translated GM130 and GRASP65 specifically bound to the purified・Golgi membrane. These results indicated that GM130 and GRASP65 localize to the Golgi apparatus directly without initial targeting to the Golgi apparatus suggesting that GM130 and GRASP65 are the candidate structural protein that support the polalization of the Golgi apparatus. The genes for Yiplp family transmembrane proteins which are candidates for the determinant of the localization of GM130 and GRASP65 were identified from genome data base. One of the family member proteins localized at the Golgi apparatus and its over expression disassembled the Golgi apparatus. The molecular mechanism for the Golgi disassembly is now under investigation. The Golgi apparatus is also disassembled after the treatment of cells with low pH medium. The effect of this treatment for GM130 and GRASP65 are currently investigated.

Research Products (6 results)

All Other

All Publications

[Publications] Yoshimura, S. et al.: "Direct targeting of cis-Golgi matrix proteins to the Golgi apparatus"Journal of Cell Science. 114. 41005-4115 (2001)

[Publications] Sohda, M. et al.: "Identification and characterization of a novel Golgi protein, GCP6O, that interacts with the integral membrane protein giantin"Journal of Biological Chemistry. 276. 45298-45306 (2001)

[Publications] Nakatsu, F. et al.: "Di-leucine Signal in the Ubiquitin Moiety"Journal of Biological Chemistry. 275. 26213-26219 (2000)

[Publications] Yoshimura, S., Nakamura, N., Barr, F. A., Misumi, Y., Ikehara, Y., Ohno, H., Sakaguchi, M. and Mihara, K.: "Direct targeting of cis-Golgi matrix proteins to the Golgi apparatus."J. Cell Sci.. 114. 4105-4115 (2001)

[Publications] Sohda, M., Misumi, Y., Yamamoto, A., Yano, A., Nakamura, N. and Ikehara, Y.: "Identification and I characterization of a novel Golgi protein, GCP60, that interacts with the integral membrane protein giantin."J. Biol. Chem.. 276. 45298-45306 (2001)

[Publications] Nakatsu, K, bakuma, M., Matsuo, r., Arase, H., Yamasaki, S., Nakamura, N., Saito, T. and Ohno, H.: "A Di-leucine Signal in the Ubiquitin Moiety. POSSIBLE INVOLVEMENT IN UBIQUITINATION-MED IATED END OCYTOSIS."J. Biol. Chem.. 275. 26213-26219 (2000)

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