

An MBoC Favorite: Malectin: a novel carbohydrate-binding protein of the endoplasmic reticulum and a candidate player in the early steps of protein N-glycosylation

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N-linked glycans are originally transferred as triglycosylated species in the endoplasmic reticulum (ER) and then subsequently have their glucoses trimmed by ER glucosidases. The lectin molecular chaperones calnexin and calreticulin bind to monoglucosylated glycan side chains. No role had been ascribed to the diglycosylated species until the Schallus *et al.* (2008) article filled this void. In this paper, a comprehensive study of a newly identified ER carbohydrate-binding protein called malectin was performed. Carbohydrate microarray analysis was used to demonstrate that malectin specifically binds diglycosylated glycans, and nuclear magnetic resonance structural studies exposed the carbohydrate-binding site of malectin. In light of its ER localization, malectin appears to be positioned to play an important role in assisting the maturation and quality control of glycoproteins in the early secretory pathway.

REFERENCE

Schallus T *et al.* (2008). Malectin: a novel carbohydrate-binding protein of the endoplasmic reticulum and a candidate player in the early steps of protein N-glycosylation. *Mol Biol Cell* 19, 3404–3414.

DOI: 10.1091/mbc.E12-02-0156

Molecular Biology of the Cell Volume 23 Page 2236.

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