

## **ROLE OF GOLGI MATRIX PROTEINS IN REGULATING SECRETORY TRAFFIC**

CECILIA ALVAREZ and ELIZABETH SZTUL

Department of Cell Biology, University of Alabama at Birmingham,  
Birmingham, AL 35294, USA

The cytoskeleton and the various membranous components of the cell must be functionally integrated to act together during complex cellular events such as division, movement, polarization, and secretion. The Golgi complex, a key compartment of the secretory pathway, is surrounded by a scaffold of matrix proteins called golgins. Golgins are directly associated with Golgi membranes, and form a detergent resistant fibrous mesh that is likely to connect to the cytoskeleton. All identified golgins (golgin 95/GM130, golgin 97, golgin 160/GCP170, golgin 245 and giantin) are characterized by numerous coiled-coil domains formed by  $\alpha$ -helical heptad repeats, separated by proline-rich helix breakers. Two golgins, golgin 95/GM130 and giantin form functional complexes with the protein p115 involved in regulating secretory traffic. This novel finding raised the possibility that golgins might also function in cells by regulating secretory traffic. Indeed, using molecular and immunological approaches, we showed that golgins regulate secretion by allowing protein transit through the Golgi complex. Our findings represent the first report of matrix proteins regulating exocytic traffic, and provide a starting point to elucidate the molecular mechanism of golgins function. The ultimate goal of our work is to delineate signaling cascades that integrate the Golgi complex and the cytoskeletal networks.