

P032 Exploring the cargo within FIP3 vesicles which traffic to the furrow

Johanne Matheson and Gwyn W. Gould

University of Glasgow

Membrane trafficking is central to cytokinesis. An essential protein in this process is Rab11-FIP3 which regulates delivery of vesicles derived from the recycling endosome to the cleavage furrow during cytokinesis. FIP3 undergoes spatial and temporal control throughout mitosis. During metaphase, FIP3 is largely cytosolic; during anaphase FIP3 accumulates at the centrosome and rapidly translocates to the furrow during cytokinesis where it regulates abscission, the terminal stage of cytokinesis.

Our working model proposes that FIP3 is recruited to vesicles derived from recycling endosomes via interaction with Rab11-GTP. This results in the traffic of these vesicles into the midbody. We suggest that these vesicles contain crucial cargo required for abscission. In an attempt to identify this cargo, we have developed fractionation procedures for mitotic HeLa cells to enrich for FIP3-containing vesicles, and screened these vesicles for the presence of other proteins known to be involved in abscission. In addition, we have generated TAP-tagged versions of FIP3 and FIP4 to screen for potential interacting proteins.

This data will be presented. Our data suggest that FIP3 interacts with tubulin, and that within the Rab11/FIP3 vesicles are localised Rab35 and centriolin. These data will be discussed within a working model for FIP3 function in cytokinesis.