

P033 The spatial and temporal regulation of FIP3 in cytokinesis
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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 anaphase, FIP3 accumulates at the centrosome and rapidly translocates to the furrow during cytokinesis. Here, we describe experiments aimed at understanding this spatial regulation.

During metaphase, FIP3 is cytosolic, but in telophase FIP3 becomes membrane associated. This association is dependent upon dephosphorylation of FIP3, as phosphatase treatment of cell extracts from telophase results in FIP3 associating with membranes. Such data offer the hypothesis that FIP3 is phosphorylated during early stages of the cell cycle, and that dephosphorylation of FIP3 is the trigger for the association of FIP3 with membranes at the centrosome. In order to further test this hypothesis, we have examined whether recombinant FIP3 is a substrate for mitotic kinases *in vitro*, and we have mapped sites of FIP3 phosphorylation *in vivo*. This data, together with pharmacological inhibition of endogenous kinases, will be presented, along with a working model for the mechanism of control of FIP3 localisation during cytokinesis.