P026 Identification of midbody matrix components

Andrea Hutterer[1], Karl Mechtler[2] and Masanori Mishima[1]

[1] Wellcome Trust/ Cancer Resarch UK Gurdon Institute; University of Cambridge

[2] IMP/IMBA, Vienna

Cytokinesis, the physical separation of two cells at the end of mitosis, is a basic cellular process. At late anaphase the plasma membrane ingresses to form the midbody at the center of the narrow intercellular bridge connecting the two prospective cells. Midbody formation is an important step during cell division and disruption of the midbody leads to cytokinesis defects. It is generally assumed that the midbody instructs the site of abscission but its exact cellular function remains unclear. To gain more insight into cytokinesis at the molecular level we are performing a proteomic analysis of the midbody matrix. First whole midbodies are purified from synchronised mammalian tissue culture cells. Subsequently, attached microtubules are removed by detergent extraction leaving behind only the midbody matrix. Proteins contained in the matrix are then detected by mass-spectrometry. The identification and analysis of midbody matrix components will lead to a better understanding of the molecular events required for successful cytokinesis.