CLIPping microtubules to vesicle transport Galjart N Department of Cell Biology and Genetics, Erasmus MC, Rotterdam

CLIP-115 and -170 are two related microtubule binding proteins that specifically associate with the distal ends of growing microtubules. CLIPs form part of a group of proteins that show this characteristic feature, they have been temed "plus end tracking" proteins (+TIPs). CLIPs regulate microtubule dynamics by promoting microtubule rescue. Common binding partners for CLIPs have been isolated and called CLASP1 and -2. CLASPs also are +TIPs; CLASP2 is specifically localized at the distal ends of microtubules at the leading edge of motile fibroblasts and has a function in the regional stabilization of microtubules. These data provide evidence for a role of CLIPs and CLASPs in the regulation of microtubule dynamics. In addition, these proteins have been suggested to have a role in membrane-microtubule interactions and vesicle transport. To dissect the functions of these proteins in more detail, we have generated knock out and knock in mice and derived cell lines and primary cultured neurons. We are using the novel real time microscope (RTM) to visualize vesicular transport in neurons, derived from the different mouse strains. Here I will present data on the phenotypes of the different mice, the characterization of the cell lines and neurons and the control over microtubule behaviour and vesicular transport, exerted by the CLIPs and CLASPs.

Niels Galjart, Department of Cell Biology and Genetics, Erasmus MC, P.O. Box 1738, 3000 DR Rotterdam, e-mail <u>n.galjart@erasmusmc.nl</u>

Speaker in session #24