

**P021** Targeting of the small GTPase ARL10c to the lysosomal membrane  
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ARF-like proteins (ARLs) are small GTPases with homology to ADP-ribosylation factors (ARFs). Whereas ARFs are important regulators of membrane traffic, ARLs seem to be involved in processes as diverse as vesicle transport (ARL1) and tubulin folding (ARL2). To examine the functions of the other human ARLs more closely, we started investigating their intracellular localization. ARL1, ARL5 and ARL8 localize to the Golgi, ARL4, ARL4L and ARL7 to the plasma membrane and ARL10c to lysosomes. Overexpression of ARL10c causes lysosomes to move to the cell periphery, suggesting a role for ARL10c in the transport of lysosomes. ARL10c is targeted to the lysosomal membrane by a mechanism unusual for the ARL-proteins. Conventionally, membrane localization of ARF/ARL-proteins is conferred by both an N-terminal myristate and an N-terminal amphipathic helix, which insert into the lipid bilayer. Instead of the N-terminal myristate ARL10c is N-terminally acetylated. The acetyl-group is necessary for the lysosomal localization of ARL10c, since mutation of the consensus sequence for acetylation leads to mislocalization of ARL10c. In addition, mutation of hydrophobic residues in the amphipathic helix of ARL10c abolishes membrane localization of ARL10c, indicating a function of the N-terminal helix in membrane attachment similar to other ARFs/ARLs. Thus, ARL10c is targeted to the lysosomal membrane by both N-terminal acetyl-group and amphipathic helix.