Oatp1a1 Requires PDZK1 to Traffic to The Plasma Membrane by Selective Recruitment of Microtubule-based Motor Proteins

Wen-Jun Wang, John W. Murray, Allan W. Wolkoff

Drug Metabolism and Disposition

Supplemental Movie 1: Movement of an oatp1a1-associated vesicle on a polarity marked microtubule. The images presented in Figure 1A are representative frames from this movie. Oatp1a1-containing endocytic vesicles were prepared from livers of wild type and PDZK1 knockout mice and flowed into microchambers that had been coated with polarity-marked fluorescent microtubules. After binding of vesicles to microtubules, motility was initiated with the addition of 50 μM ATP. This movie shows minus-end directed movement of an oatp1a1-containing vesicle prepared from PDZK1 knockout mouse liver. A red microtubule with attached green oatp1a1 labeled vesicles runs horizontally and contains markings for microtubule polarity. The polarity marks were generated by polymerizing brightly fluorescent tubulin from short, dimly fluorescent microtubule seeds, allowing the growth of long microtubule plus ends. Visible from left to right is the microtubule minus end, a dimly fluorescent seed, and the microtubule plus end to which a green, motile vesicle is bound. The white arrow follows this vesicle as it moves approximately 18 μm for 34 seconds towards the minus end of the microtubule. The total elapsed time in this movie is 50 seconds. Scale bar = 10μm.