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Effects of 3-repeat tau on taxol mobility through microtubules HYUNJOO PARK, UCSB, DEBORAH FYGENSON, ucsb, MAHN WON KIM, KAIST, KAIST COLLABORATION — Both the anti-cancer drug taxol and the microtubule-associated protein tau suppress dynamics of microtubules (MT). We have observed taxol mobility with full-length 3-repeat tau, one of six tau isoforms, using fluorescence recovery after photobleaching (FRAP) on MTs and compare with earlier results on recombinant full-length adult 4-repeat tau. Taxol mobility becomes highly sensitive to taxol concentration in the presence of 3-repeat tau (up to 1:1 molar ratio) as it does in the presence of 4-repeat tau, but is 2 to 3 times faster at low taxol concentrations. Fitting to a mean-field binding reaction model [J.L. Ross *et.al*, *PNAS* 101:12910-5 (2004)] suggests that the presence of 3-repeat tau enhances taxol movement through pores in the MT walls.

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