

DMAP⁸⁵: A β -Tubulin-Like Protein from *Drosophila melanogaster* Larvae

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Abstract: Microtubule-associated proteins (MAPs) play major regulatory roles in the organization and integrity of the cytoskeletal network. Our main interest in this study was the identification and the analysis of structural and functional aspects of *Drosophila melanogaster* MAPs. A novel MAP with a relative molecular mass of 85 kDa from *Drosophila* larvae was found associated with taxol-polymerized microtubules. In addition, this protein bound to mammalian tubulin in an overlay assay and coassembled with purified bovine brain tubulin in microtubule sedimentation experiments. The estimated stoichiometry of 85 kDa protein versus tubulin in the polymers was $1:5.3 \pm 0.2$ mol/mol. It was shown that the 85 kDa protein bound specifically to an affinity column of Sepharose-4B(422-434) tubulin peptide, which contains the sequence of the MAP binding domain on β -tubulin. Affinity-purified 85 kDa protein enhanced microtubule assembly in a concentration-dependent manner. This effect was signific