

Abstract

Tau is an intrinsically disordered neuronal protein which is thought to have a role in stabilizing axonal microtubules. We are interested in understanding the tau's functional mechanisms as relevant to the unique properties of axonal microtubules. Here, we use single molecule fluorescence and fluorescence correlation spectroscopy to characterize the interactions of tau with soluble tubulin. We identify a novel tubulin-binding domain of tau and show that it is capable of polymerizing tubulin into microtubules. We propose a model for tau function which highlights the role of this novel domain.