# Aminochrome Toxicity is Mediated by Inhibition of Microtubules Polymerization Through the Formation of Adducts with Tubulin

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In this study, we investigated the role of adducts formation between aminochrome and tubulin and its interference in microtubules assembly and stability in aminochrome-induced toxicity in SH-SY5Y cells. We also investigated whether changes in the microtubules structures are an early event that could affect tubulin expression. We demonstrated in vitro that aminochrome tubulin adducts inhibit tubulin polymerization and that aminochrome induces microtubules disassembly. Moreover, when the SH-SY5Y cells were incubated with aminochrome, we observed an increase in soluble tubulin, indicating depolymerization of microtubules. Aminochrome generates disruption of the microtubules network, leading to changes in the morphology of the cells inducing cell death, in a dose- and time-dependent manner. Interestingly, these changes preceded cell death and were partly inhibited by paclitaxel, a microtubule-stabilizing agent. Furthermore, we observed that