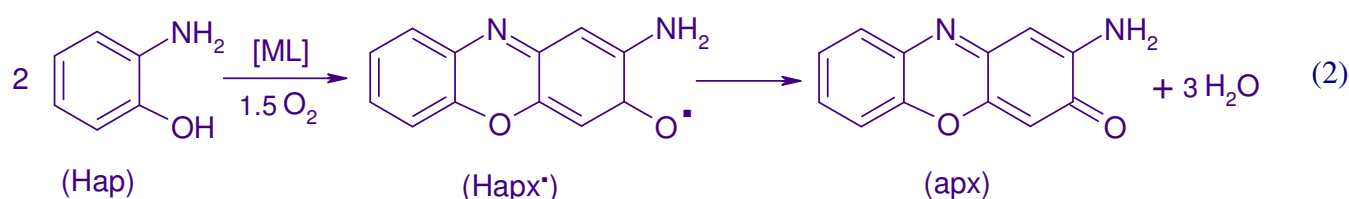
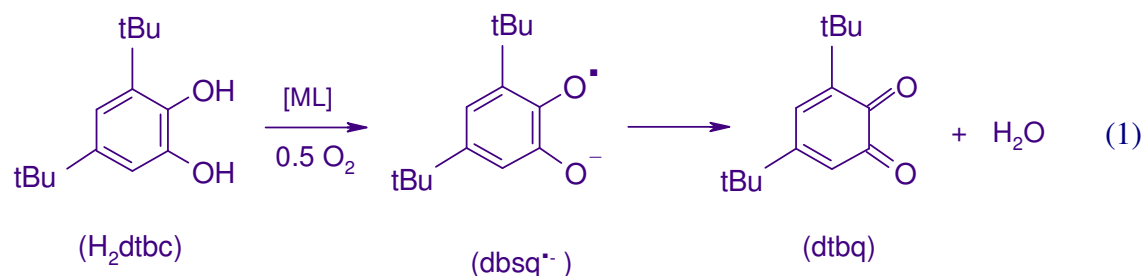
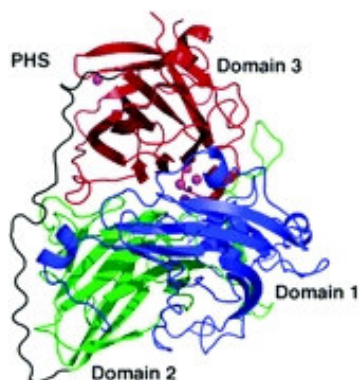


The dimeric dioximat manganese(II) complex $[\text{Mn}_2(\text{HL})_2](\text{BPh}_4)_2$ (**1**) (where H_2L is $[\text{HON}=\text{C}(\text{CH}_3)\text{C}(\text{CH}_3)=\text{NCH}_2\text{CH}_2]_2\text{NH}$) dissociates to the monomer $[\text{Mn}(\text{HL})]^+$ (**2**) upon dissolution in MeOH. Complex **2** is a functional catechol oxidase and phenoxazinone synthase model. It accelerates (1) the TEA-catalyzed oxidation of 3,5-ditert-butylcatechol to the corresponding *o*-benzoquinone and (2) the dimerization of 2-aminophenol to 2-amino-3H-phenoxazin-3-one by dioxygen under ambient conditions. (see publ.: 1., 2., 3.)

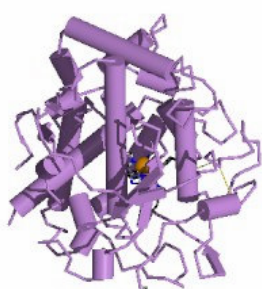


Phenoxazinone synthase (PHS) catalyzes the penultimate step in the biosynthesis of the antibiotic actinomycin D - one of the most potent antineoplastic agents known- by *Streptomyces antibioticus*.



Backbone structures of PHS showing the relative arrangement of domain 1 (residues 37-236, blue), domain 2 (residues 237-411, green), domain 3 (residues 439-628, red), the loop connecting domains 2 and 3 (residues 412-438, black), the copper atoms (purple spheres), and the bridging oxygen atom and coordinating water molecule (red spheres).

Catechol oxidases are plant enzymes containing dinuclear copper centers, which catalyze the oxidation of catechols to quinones. Catecholases are also involved in the formation of melanin pigments and the enzymatic browning of fruits.



Catechol oxidase from sweet potatoes