3-nitrotoluene dioxygenase, a Rieske non-heme iron oxygenases (ROs) from diaphorobacter sp. strain DS2 is a multicomponent enzyme that catalyses removal of an aromatic nitro group as nitrite with great efficiency to yield a mixture of 3 and 4 methyl catechol [1]. This multicomponent enzyme has been shown to catalyze cis-dihydroxylation, mono-oxygenation and desaturation of organic compounds as well[2]. The crystal structure of this enzyme was recently solved by us [manuscript]. In this talk, I will reveal how the active site of this enzyme has evolved and do a structure based inference of the substrate specificities based on the structure.


Keywords: 3-nitrotoluene dioxygenase, rieske iron centre, diaphorobacter sp. strain DS2