Electronic Supplementary Information

GC-MS analysis of degradation of high concentration of 2,6-DTBP (400 mg/L) confirmed the presence of 2,6-di-tert-butylbenzoquinone, BBQ (m/z 220) and 3,3,5,5-tetra-tert-butyl-4,4-diphenooquinone, DPQ (m/z 408), which, as quinone derivatives, are toxic for microorganism with EC$_{50}$ of 0.5 mg/L (Walker 1988) and inhibited the pseudomonad at concentration of 10 mg/L (Trevors and Basaraba 1980). However, quinone and related with that their derivatives, could be reduced by NAD(P)H-quinone oxidoreductase (EC 1.6.5.5.) and further processed. Under the exposure to concentration of 400 mg/L of 2,6-DTBP P. aeruginosa san ai showed NAD(P)H-quinone oxidoreductase activity of 192 mU/mg. Both of identified metabolites- BBQ and DPQ could be reduced to hydroquinone derivatives whose toxicity is very low (Trevors and Basaraba 1980) and furthermore degraded as proposed for 2,6-DTBP.