Biosorption and Degradation of Di-(2-ethylhexyl) Phthalate (DEHP) by *Gordonia* sp. YK1

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Di-(2-ethylhexyl) phthalate (DEHP) is used as a plasticizer in the industrial production of plastics. Because DEHP is considered to be an endocrine-disrupting chemical and recalcitrant, there has been a growing concern regarding the potential health risks associated with DEHP. In this study, isolation of DEHP-degrading microorganism was achieved by establishing highly enriched aerobic cultures capable of degrading DEHP. GC-FID was used to measure DEHP concentration and 16s rDNA sequence analysis was performed to identify the isolated microorganism. DEHP in the culture with the isolated microorganism was rapidly degraded and disappeared in 48 hr (more than 90% degradation). During the degradation of DEHP, the cells attached to DEHP oil drops and formed a heterogeneous suspension. Based on 16S rDNA analysis, the isolated DEHP-degrading microorganism belongs to the *Gordonia*.The isolated *Gordonia* sp.YK1 had the ability to utilize not only DEHP but also DEP (di-2-ethyl phthalate) and DBP(di-2-butyl phthalate) rapidly as a sole carbon source. Effective biosorption & biodegradation of DEHP by Gordonia sp.YK1 was also confirmed with low concentration of DEHP (0.5~50 ppm).