

Adsorptive removal of BPA by recombinant microorganism

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Bisphenol A (BPA) is one of the representative endocrine disrupting chemicals (EDCs). Even small amount of BPA has a high toxicity to humans and animals as BPA functions like hormone in their body. Thus, much attention has been paid to the detection and/or removal of BPA in varying matrices of environment. In the present study, microbe-based adsorbents capable of removing BPA from water environment were constructed, respectively, and its performance assessed. The heptapeptide sequence screened by phage display biopanning was displayed as BPA-selective adsorption moiety on the surface of recombinant *E.coli*. The peptide-displayed *E.coli* showed increased removal capacity of BPA than wild type *E.coli*. BPA adsorption in recombinant cell followed Langmuir isotherm. The BPA removal efficiency of recombinant cell was also maintained in the artificial wastewater environment, where recombinant cell showed higher BPA adsorption capacity than wild type cell.