

Selective removal of bisphenol A by peptide-based magnetic adsorbent

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Bisphenol A (BPA) is one of the endocrine disrupting chemicals (EDCs). Thus, much interest has been given to the removal of BPA from food sources and living environment. For example, the adsorption onto conventional activated carbon was investigated, but the removal of BPA was not selective and so relatively large amount of sorbent was required for complete removal of BPA coexisting with interfering substances. As a reusable adsorbent to remove BPA, a heptapeptide with specific affinity to BPA, LysSerLeuGluAsnSerTyr (KSLENSY) was covalently bonded onto the surface of magnetic bead. Compared to the bare bead without peptide, the peptide-linked adsorbent showed much higher removal capacity of BPA. Also, BPA-binding peptide had higher selectivity toward BPA compared with structural analogs of BPA such as bisphenol F and bisphenol S.