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Toxicity recognition of TCDDs using artificial receptors

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Uniformly sized polymeric separation media were prepared using *o*- or *p*-xylene as a porogenic template to investigate chromatographic selectivity towards tetra-chlorinated dibenzo-*p*-dioxins (TCDDs). TCDDs having chlorine atoms at *ortho* positions of phenyl rings were selectively retained on stationary phase prepared with *o*-xylene as porogenic template, while TCDDs having chlorine atoms at *para* positions of phenyl ring were found to be retained selectively on the stationary phase imprinted by the porogenic template, *p*-xylene. Slightly longer cross-linking agent afforded chromatographically selective retention for larger TCDD isomers. It was also found that positional relationship between substituted chlorine atoms was also important for chromatographic recognition. BDMA imprinted with o-xylene afforded the largest retention for 2,3,7,8-TCDD.