SERTRALINE IMPRINTED POROUS POLY(ACRYLIC ACID-CO-DIVINYLBENZENE)

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Molecularly imprinted polymers (MIP) are polymers made of highly crosslinked polymer chains in the presence of target molecule that is covalently or non-covalently bonded to the polymer. After successful removal of target molecule it can be used for further rebinding of the target molecul or structural related molecules. [1] This technique is selective and useful for the determination of analytes in trace amounts such as pharmaceutical residues that can enter in waste waters and surface waters and may have undesirable effects on living organisms. Standard analytical methods may not be selective enough to detect such residues.

In our work we used acrylic acid (AA) as the active monomer and divinyl benezene (DVB) as the crosslinker in order to induce sertraline (widely perscibed antidepressant) MIP effect. 70 mol.% of DVB and toluene as the porogenic solvent was used to prepare porous poly(acrylic acid-co-divinylbenzene). Sertraline was removed by acid/base extraction and prepared MIP was used to adsorb sertraline and its structuraly related metabolite norsertraline.

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[1] E. Caro, R. Marce, F. Borrull, P. Cormack, and D. Sherrington. Application of molecularly imprinted polymers to solid-phase extraction of compounds from environmental and biological samples, TrAC Trends Anal. Chem., 25 (2): 143–154, 2006.