

Supplementary Information

Water-compatible surface-imprinted microspheres for high adsorption and selective recognition of peptide drug from aqueous media

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Table S1 Recipe for the synthesis of imprinted microspheres (the obtained microspheres with different monomers or cross-linkers are marked)

| Experimental conditions | | MIMs ¹ | MIMs ² | MIMs ³ | MIMs* | NIMs* |
|-------------------------|----------|-------------------|-------------------|-------------------|-------|-------|
| Monomer (mmol) | AM | 0 | 0 | 0 | 1 | 1 |
| | EGDMA | 2 | 0 | 0 | 0 | 0 |
| Cross-linker (mmol) | MBA | 0 | 2 | 0 | 0 | 0 |
| | [AVIM]Cl | 0 | 0 | 2 | 4 | 4 |

Table S2 Swelling behaviour of the microspheres

| Microspheres | Monomers used in polymerization | SR (%) ^c |
|--------------------------|---------------------------------|---------------------|
| P(PEDMA-VI) ^a | PEGDMA: VI: EGDMA = 2: 1: 0.5 | 20 |
| PEGMA-VI ^b | PEGMA: VI: EGDMA = 2: 1: 0.5 | 150 |

^a The microspheres prepared in this work; ^b The microspheres prepared in the work of Uğuzdoğan et al.³⁵; ^c Equilibrium SR was obtained after approximately 15–20 min.

Table S3 Surface atomic compositions of the support microspheres from the XPS survey spectra

| Sample | Elemental atomic composition (atomic %) | | | |
|--------------------|---|-------|------|------|
| | C | O | N | Cl |
| P(PEGDMA-VI) | 68.50 | 25.78 | 5.81 | 0 |
| P(PEGDMA-VI)@IL(1) | 74.63 | 21.30 | 3.94 | 0.13 |
| P(PEGDMA-VI)@IL(2) | 75.47 | 21.05 | 3.33 | 0.15 |
| P(PEGDMA-VI)@IL(3) | 75.12 | 21.28 | 3.40 | 0.20 |
| P(PEGDMA-VI)@IL(4) | 75.43 | 20.98 | 3.36 | 0.23 |