Electronic Supplementary Information (ESI)

Surface-modified multifunctional MIP nanoparticles

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Synthesis of eosin *O*-acrylate monomer. The synthetic procedure for the preparation of eosin *O*-acrylate is illustrated in Figure S1. 5 g of eosin Y disodium salt was dissolved in 100 ml of NMP. The solution was stirred, sonicated for 2 min and purged with N_2 for 10 min. Then 5.85 ml of acryloyl chloride was added into the solution and the reaction mixture was stirred overnight in the dark. Salt, which was formed during the reaction, was filtrated and the product precipitated in deionized water. Further the solution was centrifuged to separate the precipitate and finally rinsed 5 times with deionized water. The precipitate was dissolved in DCM and extracted using liquid-liquid extraction. The organic phase including desired product was further purified on a silica column and DCM as mobile phase. All steps were followed by TLC. The powder product obtained after evaporation of the solvent was stored at - 18 °C. The yield was 31 %.
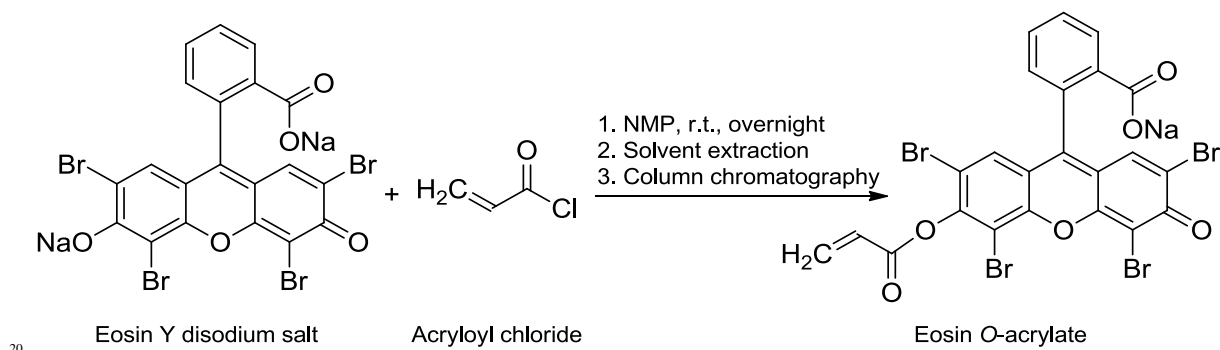
Fig. S1 Schematic illustration of eosin *O*-acrylate synthesis.

Post-derivatization of MIP NPs with PEG shell. The 1H spectra of bare, non-modified nanoparticles in compare with PEG-shell MIP NPs and PEGMA are presented in Figure S4. As indicated, new peak in the ppm range 3.35 - 3.55 can be observed in a presence of PEG. Additional experiment was performed using only *poly*(ethylene glycol) methacrylate (PEGMA) monomer to compare signal from PEGMA and position of the new peak (Figure S4, top spectrum). Results confirmed the presence of PEG.

All experiments were performed in acetonitrile-D3 using Jeol ECX-400 Multinuclear NMR spectrometer.
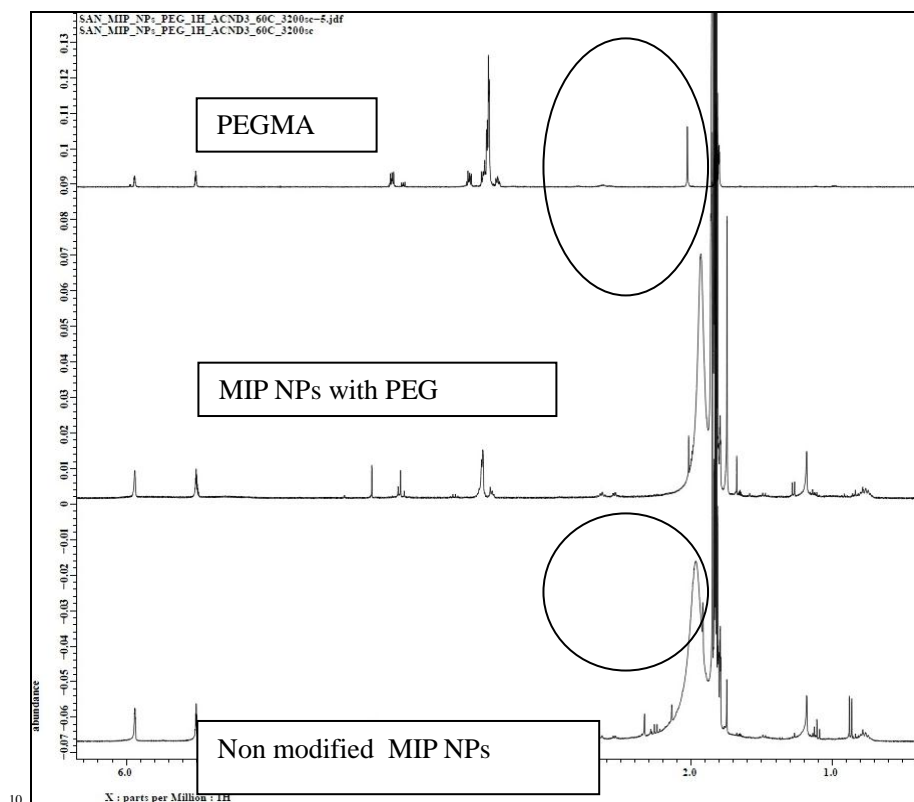
Fig. S4 ^{1}H spectra of non modified nanoparticles (bottom), MIP NPs with PEG (middle) and spectrum of PEGMA (top).