Electronic Supplementary Material (ESI) for Nanoscale.

SUPPORTING INFORMATION

FIB and MIP: Understanding Nanoscale Porosity in Molecularly Imprinted Polymers via 3D FIB/SEM Tomography

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	Template Propranolol	**Functional monomer** Methacrylic acid (MAA)	**Cross linker** Divinylbenzene (DVB)	**Crosslinker** Ethylene glycol dimethacrylate (EGDMA)	**Hydrolyzation** Potassium hydroxide (KOH)
MIP0	Yes (1.61 mmol)	Yes (6.44 mmol)	100% (30.93 mmol)	0% (-)	no
MIPH0	Yes (1.61 mmol)	Yes (6.44 mmol)	100% (30.93 mmol)	0% (-)	yes
MIPH40	Yes (1.61 mmol)	Yes (6.44 mmol)	60% (18.56 mmol)	40% (12.37 mmol)	yes
NIP0	no	Yes (6.44 mmol)	100% (30.93 mmol)	0% (-)	no
NIPH0	no	Yes (6.44 mmol)	100% (30.93 mmol)	0% (-)	yes
NIPH40	no	Yes (6.44 mmol)	60% (18.56 mmol)	40% (12.37 mmol)	yes

Table 1: Composition of investigated molecularly imprinted polymers (MIPs) imprinted for propranolol

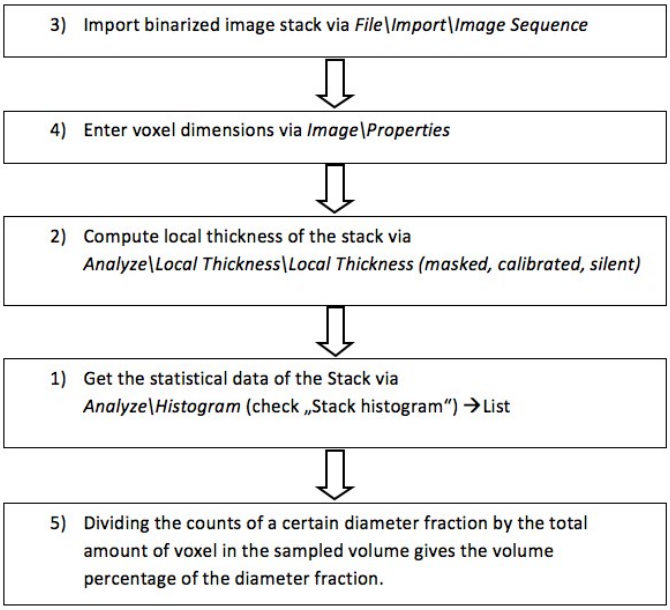

Figure S1: Flow chart for evaluating the pore space distribution using FIB/SEM tomography

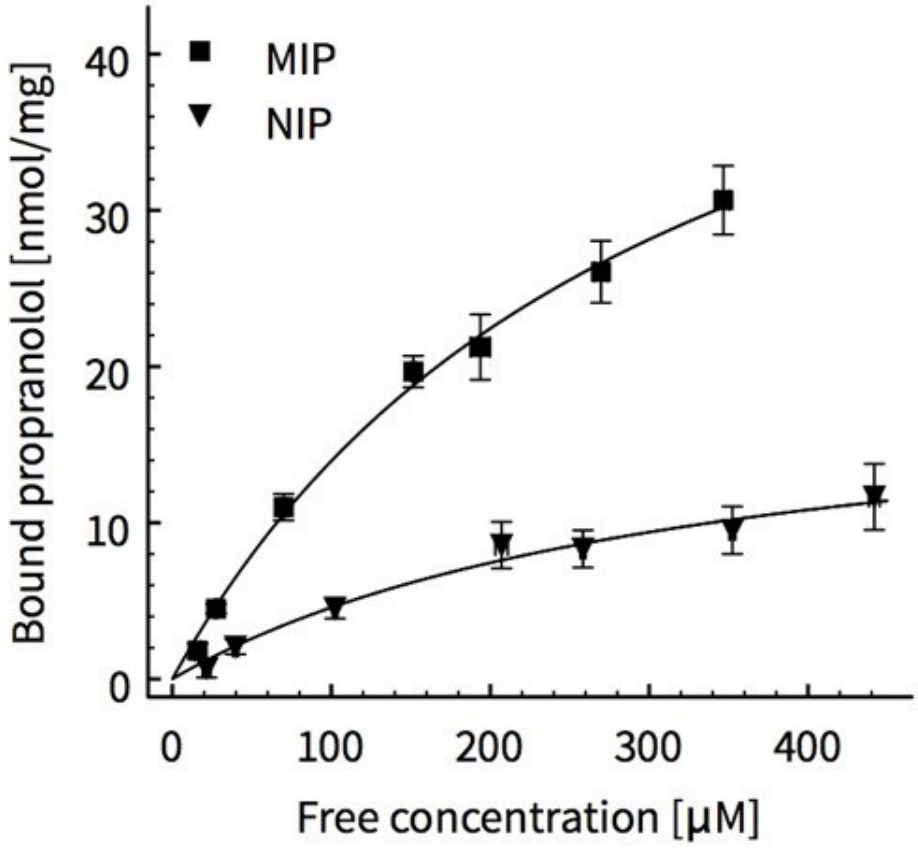

Figure S2: Exemplary rebinding curve for MIP40 and NIP40 using filter plate incubation. Data were obtained using a conventional UV well plate reader at 290 nm (N = 3). Isotherms fitted using Prism 5 software and the implemented analyzing tool with "one site – specific binding" (equates Langmuir isotherm) model.

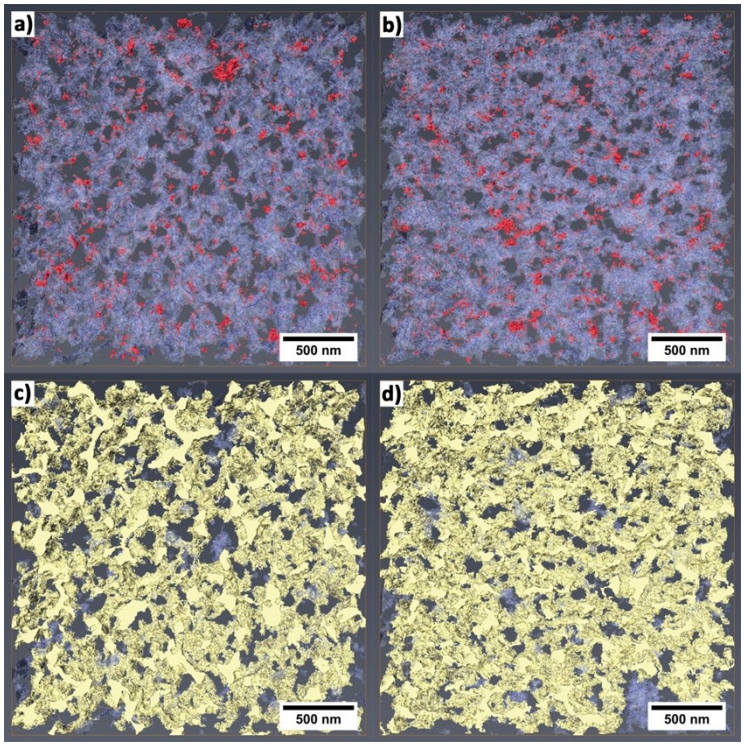

Figure S3: 3D visualization of pore space presented in transparent blue for MIP0 in a) and c), and MIPH0 in b) and d). The highlighted pores in red color presented in a) and b) show pore space, which is isolated within the sampled volume. None of these pores have a connection to the front facet of the sampled volume. In c) and d), large interconnected pore spaces are marked with the same color with sections that are connected to each other, and to the front facet. MIP0 pore space marked in c) shows a network, which is distributed among the entire sampled volume as do the MIPH0 networks marked in d). There is no significant difference between both pore networks visible in terms of interconnectivity.

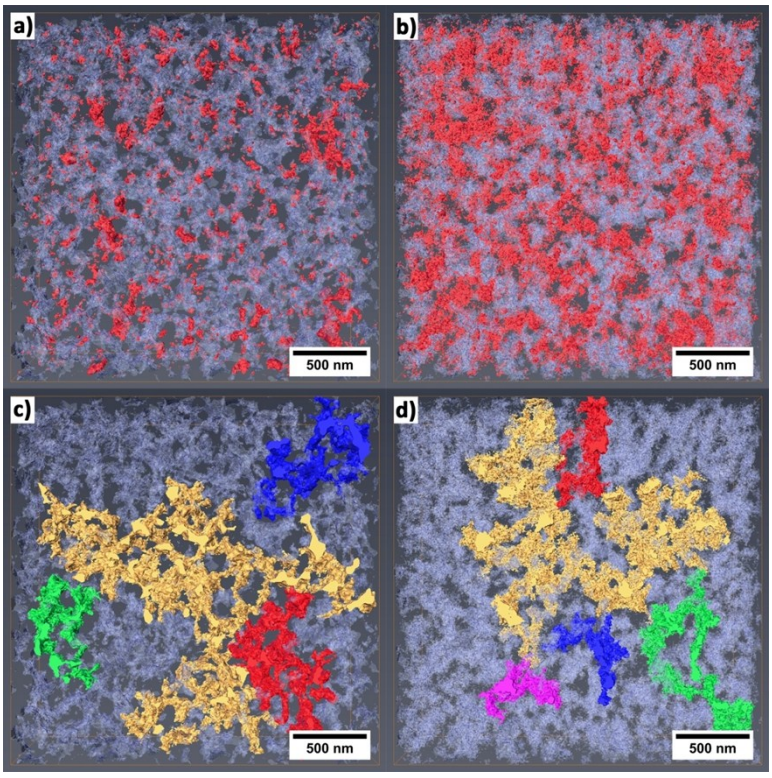

Figure S4: 3D visualization of pore space presented in transparent blue for NIPH0 in a) and c), and NIPH40 in b) and d). The highlighted pores in red color presented in a) and b) show pore space, which is isolated within the sampled volume. None of these pores have a connection to the front facet of the sampled volume. In c) and d), large interconnected pore spaces are marked with the same color with sections that are connected to each other, and to the front facet. NIPH40 shows much more isolated pore space than NIPH0.

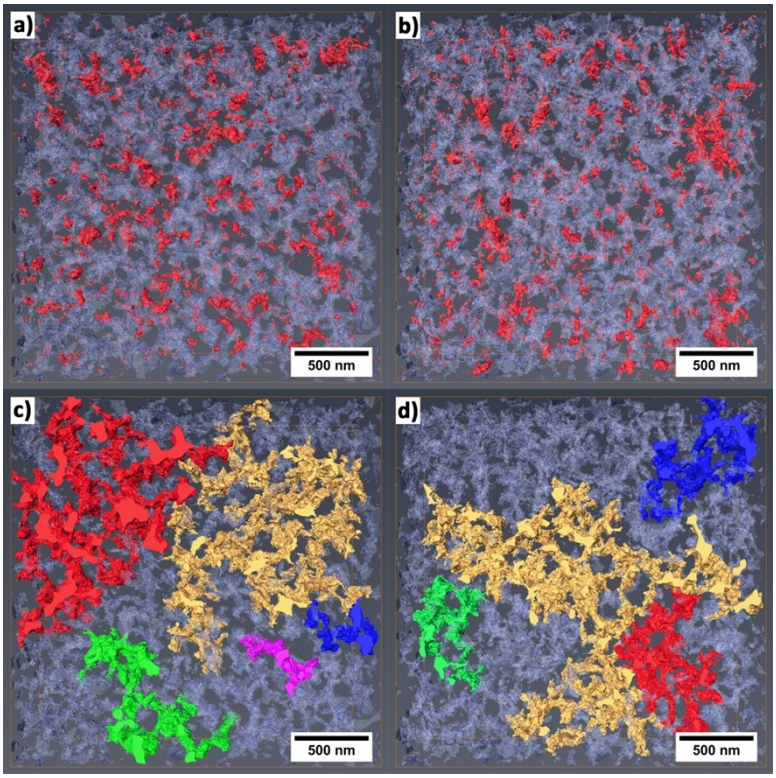

Figure S5: 3D visualization of pore space presented in transparent blue for NIP0 in a) and c), and NIPH0 in b) and d). The highlighted pores in red color presented in a) and b) show pore space, which is isolated within the sampled volume. None of these pores have a connection to the front facet of the sampled volume. In c) and d), large interconnected pore spaces are marked with the same color with sections that are connected to each other, and to the front facet. As for their MIP counter parts NIP0 and NIPH0 show no significant difference in pore space connectivity.