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Supplementary Information

Incorporation of NU-1000 into Cellulose Acetate Membranes with Preserved Indoxyl Sulfate Adsorption

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1. Methods

1.1. Adsorption of Indoxyl Sulfate by NU-1000 MOF in Phosphate-Buffered Saline

Quantification of indoxyl sulfate (IS) was performed by a modified version of the protocol by Tao *et. al.*[4] IS containing solutions (500 µL) were added to ice-cold acetonitrile (ACN, 1000 µL), vortexed for 5 seconds and centrifuged at 4500 g for 10 minutes at 20 °C in a Micro Star 17R centrifuge (VWR, Collegeville, PA, USA). The supernatant was then collected, diluted with Milli-Q water (1:1) and filtered using a 0.22 µm PTFE filter (Millipore) prior to HPLC analysis (injection volume 5 µL). Measurements were performed using a Waters HPLC system series 2695 (Waters, Milford, MA, USA) equipped with an autosampler, Empower software data station, version 2.0.7, and a multi fluorescence detector (2475 module). The chromatographic separation was performed by a C18 column (Kinetex 5 µm C18 100 Å, LC Column 150 × 4.6 mm, Phenomenex, Torrance, CA, USA) protected with a UHPLC C18 (C18, 4.6 mm ID, Phenomenex, Torrance, CA, USA) security guard cartridge. The column temperature was set at 30 °C and the samples were kept at 15 °C. The mobile phase, which consisted of ammonium formate, 20 mmol L^{-1}, pH 4 (mobile phase A) and ACN (mobile phase B), was delivered after the gradient profile for mobile phase B was: 0–2 min, 15%; 11–14 min, 100%; 14.2–22 min, 15%; the flow rate gradient was 0.4 mL min^{-1} between 0–11.2 min, increasing to 0.5 mL min^{-1} from 11.2–16 min and returning to 0.4 mL min^{-1} between 16.2–22 min. The excitation and emission wavelengths were set at 280 and 360 nm, respectively. Measurements were calibrated with standard curves of IS which presented a linear behavior over the concentration range of the experiments. The solutions were prepared in triplicate.

1.2. Quantification of Indoxyl Sulfate by the Salting-out Assisted Liquid-Liquid xtraction (SALLE) Method

Quantification of IS was carried out by the Salting-out Assisted Liquid-Liquid Extraction (SALLE) method detailed in [53]. Briefly, ACN (900 µL) was added to the sample (100 µL). The mixture was vortexed for 5 seconds and centrifuged at 4500 g for 10 minutes in a Micro Star 17R centrifuge (VWR, Collegeville, PA, USA). Then, the supernatants (900 µL) were collected, to which 5 M NaCl (500 µL) was added. Finally, the organic phase (700 µL) was collected and analyzed by fluorescence spectroscopy (FP-8500 Spectrofluorometer, Jasco, United Kingdom) at an excitation wavelength (λ_{ex}) of 275 nm, and the measured emission wavelengths (λ_{em}) ranged from 381 and 385 nm. The excitation and emission bandwidths were adjusted to 1 and 5 nm, respectively, and a PMT voltage 520 V was used.