

(ESI) Table S1: Further specifications of the membrane-filtration methods for the isolation of DOM.

Further membrane specifications	Ref.
<u>Diaflo UM-05</u> : other details unspecified; <u>Diaflo UM-10</u> : other details unspecified; <u>Diaflo XF-100</u> : other details unspecified	83
<u>Filmtec CrW30-4619-A membrane</u> : 0.2 µm film thickness; <u>Dowex 50</u> : active group nuclear sulfonic acid, other details unspecified	114
<u>Amicon spiralwound</u> : polysulfone polymer filters, 1 nm pore size	52, 81, 82
<u>S1N1 spiralwound</u> : polysulfone polymer filters, other details unspecified	193
<u>Fluid Systems CA-SD</u> : RO cellulose acetate membrane, other details unspecified; <u>Fluid Systems TFCS</u> : polyester fabric substrate, nanofiltration membrane composed of: porous polysulfone support, cross-linked aromatic polyamide rejecting surface, other details unspecified	117
<u>S1N1 spiralwound</u> : polysulfone polymer filters, other details unspecified; <u>BIORAD GX50</u> : polystyrene-based resin, 297-841 µm size, surface area 35 m ² /gr; pore size 100 Å; <u>C₁₈ BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å; <u>Amberlite XAD-8TM</u> : 20-50 mesh beads, other details unspecified; <u>XAD-4TM</u> : 83-297 µm size, surface area 750 m ² /gr, pore size 55-80 Å	59
<u>Amicon 8400</u> : stirred cells, cellulose membrane, other details unspecified; <u>3M C₁₈ SPE DISK</u> : 12 µm beads, pore size 60 Å, other details unspecified	60
<u>Membranes used in the PS preparation</u> : diethylaminoethylcellulose-cellulose (DEAE), other details unspecified; <u>Polyvinylidene fluoride porous membrane</u> : 1 µm pore size; high-density polyethylene casing with predrilled holes; <u>Amberjet 1200H Plus</u> : other details unspecified	119
<u>Dow FilmTec TW30-4021</u> : other details unspecified; <u>Neosepta AMX</u> : 0.12-0.18 mm thick, other details unspecified; <u>Neosepta CMX</u> : 0.14-0.20 mm thick, other details unspecified	70, 71
<u>F-300, Chemviron GAC</u> : particle size 1.6 mm, surface area 1,000 m ² /gr; <u>K13 Norit GAC</u> : vegetal other details unspecified; <u>Dow FilmTec TW30-2514</u> : other details unspecified; <u>XAD-8TM</u> : other details unspecified; <u>XAD-4TM</u> : other details unspecified	312
<u>Amicon 375 mL</u> : cellulose membrane, stirred cells; <u>3M C₁₈ SPE DISK</u> : 12 µm beads, pore size 60 Å, other details unspecified	77
<u>Fisherbrand</u> : 100 µm film thickness; <u>Nalgene 250 mL polycarbonate cell and Osmosis nylon membranes</u> : cascade frontal filtration; <u>Amicon 8400 mL</u> : polycarbonate cell	76

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(ESI) Table S2: Further specifications of the SPE methods for the isolation of DOM.

Adsorbent type	Ref.
<u>Amberlite XAD-8TM</u> : 400-841 mesh beads, surface area 450 m ² /gr, pore size 250 Å; <u>Bio-Rad Ag-MP-50</u> : 20-50 mesh beads, surface area 35 m ² /gr, pore size 100 Å; <u>Duolite A-7</u> : 16-50 mesh beads, surface area 40-80 m ² /gr, pore size 300-500 Å	94
(Ref.42) <u>C₁₈ SEP-PAK</u> : 55-105 µm beads, surface area 325 m ² /gr, pore size 125 Å; (Ref.43) <u>C₁₈ BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å; (Ref.43) <u>C₂ BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å; (Ref.43) <u>Phenyl BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å	98, 99
<u>Bio-Rad Ag-MP-50</u> : 297-841 µm size, surface area 35 m ² /gr; pore size 100 Å; <u>Amberlite XAD-8TM</u> : 20-50 mesh beads, other details unspecified; <u>XAD-4TM</u> : 83-297 µm size, surface area 750 m ² /gr, pore size 55-80 Å	310
<u>XAD-8TM</u> : other details unspecified; <u>XAD-4TM</u> : other details unspecified	95
<u>XAD-8TM</u> : 250-841 µm size, other details unspecified; <u>Dowex 50W-8X</u> : hydrogen form, styrene divinylbenzene-based adsorbent, 297-841 mesh beads, surface area: 35 m ² /gr, other details unspecified	67
<u>XAD-2TM</u> : other details unspecified	93
<u>XAD-8TM</u> : other details unspecified; <u>XAD-4TM</u> : 83-297 µm size, surface area 750 m ² /gr, pore size 55-80 Å	92
<u>SUPERCLEAN LC-18</u> : 55 µm beads, surface area 498 m ² /gr, pore size 64 Å; <u>SUPELLEAN ENVI-Chrom P</u> : 80-160 µm beads, surface area 800-950 m ² /gr, pore size 110-175 Å	90
<u>Supelco polyacrylate-coated fiber</u> : 85 µm, conditioned for 3 hours at 300 °C.	109
<u>3M C₁₈ SPE DISK</u> : 12 µm beads, pore size 60 Å, other details unspecified	100
<u>C₁₈ BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å; <u>Amberlite XAD-8TM</u> : 297-841 µm size, other details unspecified; <u>XAD-4TM</u> : 50-160 mesh beads,	59

surface area 750 m²/gr, pore size 55-80 Å

<u>3M C₁₈ SPE DISK</u> : 12 µm beads, pore size 60 Å, other details unspecified	60
<u>Nanotubes</u> : external diameter 10 nm, 5-15 µm length; <u>Filtrisorb 400</u> : external diameter 55-75 µm	106
<u>PPL BOND ELUT</u> : 125 µm beads, surface area 600 m ² /gr, pore size 150 Å; <u>ENV BOND ELUT</u> : 125 µm beads, surface area 500 m ² /gr, pore size 450 Å; <u>C₁₈ BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å; <u>C₈ BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å; <u>C₁₈-OH BOND ELUT</u> : 40-120 µm beads, surface area 300 m ² /gr, pore size 150 Å	57
<u>3M C₁₈ SPE DISK</u> : 12 µm beads, pore size 60 Å, other details unspecified	78
<u>Nanotubes</u> : external diameter 10-30 nm, 5-20 µm length; <u>AG-MP5</u> : 37-74 µm size, other details unspecified; <u>AG1-X8</u> : 37-74 µm size, other details unspecified	107
<u>3M C₁₈ SPE DISK</u> : 12 µm beads, pore size 60 Å, other details unspecified	77
<u>Supelco PDMS (polydimethylsiloxane)</u> : 7 µm, conditioned for 30 minutes at 250 °C; <u>Supelco PDMS-DVB (divinylbenzene)</u> : 100 µm, conditioned for 30 minutes at 250 °C; <u>Supelco PDMS-DVB</u> : 65 µm, conditioned for 30 minutes at 250 °C	110
<u>Amberlite XAD-8™</u> : 297-841 µm size, other details unspecified; <u>C₁₈ BOND ELUT</u> : 40-120 µm beads, surface area 500 m ² /gr, pore size 60 Å; <u>PPL BOND ELUT</u> : 125 µm beads, surface area 600 m ² /gr, pore size 150 Å; <u>DEAE</u> : 60 gr on dry weight basis	61
<u>PPL BOND ELUT</u> : 125 µm beads, surface area 600 m ² /gr, pore size 150 Å; <u>HYPERCARB</u> : 3.5 µm particle size, pore size 250 Å, surface area 120 m ² /gr; <u>HPLC column</u> : 4.6 x 50 mm, 5 µm particle size	102, 309
