

Ultrafiltration/Granulated Active Carbon-Biofilter: Efficient Removal of a Broad Range of Micropollutants: Supplementary Materials

Table S1. Investigated micropollutants and effects.

Nr	Substance	Pharmaceutical/ Characteristics	Nr	Substance	Mode of action
1	Amlodipine	Antihypertensive	22	Naproxen	Anti-inflammatories
2	Atenolol	Antihypertensive	23	Norethindron	Hormones
3	Bisoprolol	Antihypertensive	24	Norfloxacin	Antibiotics
4	Caffeine	Stimuli	25	Oxazepam	Sedatives
5	Carbamazepine	Sedatives	26	Paracetamol	Anti-inflammatories
6	Ciprofloxacin	Antibiotics	27	Progesterone	Hormones
7	Citalopram	Antidepressants	28	Propranolol	Antihypertensive
8	Diclofenac	Anti-inflammatories	29	Ramipril	Antihypertensive
9	Doxycycline	Antibiotics	30	Ranitidine	Histamine-2 blocker
10	Enalapril	Diuretica	31	Sertraline	Antidepressants
11	Estradiol	Hormones	32	Simvastatin	Cholesterol-lowering
12	Estriol	Hormones	33	Sulfamethoxazole	Antibiotics
13	Estrone	Hormones	34	Terbutaline	Asthma medicine
14	Etinyloestradiol	Hormones	35	Tetracycline	Antibiotics
15	Finasteride	Prostate	36	Trimethoprim	Antibiotics
16	Furosemide	Diuretica	37	Warfarin	Anticoagulant
17	Hydrochlorothiazide	Antihypertensive	38	Microplastics	Size: 20 – 300 µm; >300 µm
18	Ibuprofen	Anti-inflammatories	39	Oestrogen effect	Yeast Oestrogen Screen (YES)
19	Ketoconazole	Antifungal	40	Phenolic compounds	Bisphenol A, triklosan, nonylphenol, octylphenol, m.m.
20	Ketoprofen	Anti-inflammatories	41	Bacteria, Pathogens	Total and faecal coliforms
21	Metoprolol	Antihypertensive			

Table S2. Analysed average concentrations of pharmaceuticals at the GAC-biofilter at the final sampling after 60,000 EBV.

	Influent	Effluent	Reduction
	ng/L	ng/L	%
Amlodipine	<13	<13	-
Atenolol	60	<3.9	>94
Bisoprolol	39	<4.6	>88
Citalopram	424	<7.3	>98
Diclofenac	703	<22	>97
Fluoxetine	<7.8	<7.8	-
Furosemide	73	<6.6	>91
Hydrochlorothiazide	1628	13	99
Ibuprofen	<6.7	<6.7	-
Carbamazepine	434	75	83
Ketoprofen	<10	<10	-

Caffeine	204	142	30
Metoprolol	828	7,4	99
Naproxen	<12	<12	-
Oxazepam	552	110	80
Paracetamol	<11	<11	-
Propranolol	80	<5.7	>93
Ramipril	<5.2	<5.2	-
Ranitidine	<47	<47	-
Risperidone	<53	<53	-
Sertraline	22	<8.1	>63
Simvastatin	<7.0	<7.0	-
Terbutaline	25	<2.0	>92
Warfarin	4,7	<1.6	>66

< indicates a level below the reporting limit

Decrease with > indicates minimum decrease based on LOQ