

## Updated knowledge, partitioning and ecological risk of Pharmaceuticals and Personal Care Products in the aquatic environment worldwide

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Table S1. PPCPs (name and concentration - ng L<sup>-1</sup>) detected in the aquatic environment from different countries reported in papers published from 2014 to 2022

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Mastrángelo <i>et al.</i> (2022)	Argentine	Codeine (7 - 12), Acetaminophen (3506 - 10334), Salicylic acid (62 - 371), Ibuprofen (51 - 2143), Diclofenac (142 - 320), Naproxen (350 - 402), Ciprofloxacin (175 - 299), Clarithromycin (178 - 248), Metronidazol (117 - 217), Ofloxacin (74 - 94), Sulfamethoxazole (40 - 336), Trimethoprim (67 - 77), Albendazole (62 - 129), Levamisole (10 - 23), Losartan (321 - 437), Irbesartan (13 - 78), Valsartan (770 - 1093), Atenolol (5 - 445), Propranolol (12 - 30), Sotalol (7 - 12), Hydrochlorothiazide (338 - 498), Furosemide (89 - 104), Ranitidine (29 - 47), Bezafibrate (28 - 49), Carbamazepine (1 - 147), 10,11-EpoxyCBZ (10 - 14), 2-HydroxyCBZ (14 - 25)
Vanryckeghem <i>et al.</i> (2019)	Belgian	Acetaminophen (2.4 - 39.0), amantadine (2.7 - 10.4), atenolol (1.5 - 40), bezafibrate (0.7 - 4.1), bisoprolol (2.3 - 28), carbamazepine (3.7 - 42), clarithromycin (8.0 - 10.0), diazepam (0.13 - 0.15), diclofenac (10 - 69), efavirenz (1.1 - 1.7), flumequine (6.0 - 18.0), ifosfamide (0.2 - 0.4), ketoprofen (0.5 - 1.1), metoprolol (0.4 - 16.0), metronidazole (0.4 - 2.8), nalidixic acid (6.2 - 10.0), naproxen (52.0 - 63.0), nevirapine (0.4 - 0.8), propranolol (0.9 - 11.0), rimantadine (0.22), sotalol (2.2 - 156), sulfamethoxazole (1.1 - 8.5), trimethoprim (0.2 - 6.7), venlafaxine (2.0 - 20.0), DEET (3.3 - 11.0), methylparaben (3.4 - 10.6), oxybenzone (7.0 - 8.0), piperonylbutoxide (1.1 - 13.0), propylparaben (0.6 - 1.5).
Campanha <i>et al.</i> (2015)	Brazil	Acetaminophen (< 3.0 - 3042.1), atenolol (< 0.04 - 8199.0), caffeine (20.5 - 129585.0), carbamazepine (1.7 - 215.4), diclofenac (< 0.04 - 385.6), ibuprofen (< 2.0 - 743.9), naproxen (< 0.1 - 655.2), propranolol (< 0.1 - 61.8), triclosan (< 0.8 - 281.1), estrone (< 0.1 - 14.7), 17-β-estradiol (< 0.04 - 14.8)
Caldas <i>et al.</i> (2019)	Brazil	Atrazine (5 - 49), avobenzone (240), caffeine (< 40), glibenclamide (50 - 120), methylparaben (15 - 840), nimesulide (70 - 730), propylparaben (90 - 190), triclocarban (< 0.8), triclosan (< 80)
Pompei <i>et al.</i> (2019)	Brazil	Acetaminophen (30.0 - 130.0), benzophenone-3 (320.0 - 2100.0), diclofenac (20.0 - 50.0), ibuprofen (10.0 - 130.0), methylparaben (100.0 - 1192390.0), naproxen (10.0 - 100.0)
Chaves <i>et al.</i> (2020)	Brazil	Acetaminophen (< 200 - 1695), albendazole (< 4 - 22), caffeine (7 - 13798), carbamazepine (< 12 - 83), diclofenac (< 100 - 463), ethylparaben (< 52), furosemide (< 52 - 112), ibuprofen (< 100 - 320), lidocaine (< 20 - 41), mebendazole (< 4 - 18), methylparaben (< 20 - 660), sulfamethoxazole (< 20 - 120)
Rico <i>et al.</i> (2021)	Brazil	Lincomycin (2 - 11), Clarithromycin (1 - 28), Metronidazole (2.1 - 159), Sulfamethoxazole (1.1 - 893), N4-acetylsulfamethoxazole (1.6 - 679), Trimethoprim (4.6 - 143), Atenolol (1.7 - 282), Atenolol acid (1.7 - 683), Enalapril (4.4 - 103), Furosemide (5.7 - 133), Propranolol (5.5 - 26), Valsartan (14 - 3391), Atorvastatin (1.1 - 7.3), Gemfibrozil (1.4 - 20), Metformin (9.7 - 30742), Omeprazole (0.7 - 2.7), Diclofenac (32 - 167), Ibuprofen (3.2 - 1803), Ketoprofen (28 - 69), Naproxen (4.5 - 473), Acetaminophen (3.7 - 17605), Codeine (0.3 - 71), Venlafaxine (3.5 - 128), Carbamazepine (0.4 - 240), Carbamazepine epoxide (3.1 - 27), Diazepam (3.8 - 7.8), Lorazepam (4.8 - 66), Benzoylecgonine (2.2 - 1958), Caffeine (14 - 12237), Paraxanthine (3.2 - 1246), Nicotine (0.8 - 1670), Cotinine

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
		(8.5 – 221), Salbutamol (0.2 – 5.4), Testosterone (2.4 – 2.4), 17 $\beta$ -Estradiol (5.7 – 9.2), Estriol (13 – 166), Estrone (0.9 – 82), Galaxolide (54 – 2978), Musk ketone (0.1 – 78), Tonalide (43 – 1219)
Roveri <i>et al.</i> (2021)	Brazil	caffeine (143.4–516.0), losartan (4.2–21.8), atenolol (1.1–18.2), acetaminophen (1.5–13.8), benzoylecgonine (1.0–4.8), carbamazepine (1.1–4.0), diclofenac (1.9–3.5), cocaine (0.5–1.7), and orphenadrine (0.1–0.8)
Pisetta <i>et al.</i> (2022)	Brazil	caffeine (12.58–119.80), diclofenac (1.34–7.92), atenolol (1.13–2.50), losartan (0.43–3.20), acetaminophen (0.21–10.04), orphenadrine (0.07–0.09), cocaine (0.02–0.17), benzoylecgonine (0.01–1.1) and carbamazepine (0.02–0.27)
Solla <i>et al.</i> (2016)	Canada	Metformin (5122.5), caffeine (1024.1), 2-OH-ibuprofen (610), theophylline (665), valsartan (250.8), DEET (618.1), naproxen (197.9), codeine (116.0), ibuprofen (1670), atenolol (103.9), clarithromycin (121.5), carbamazepine (59.0), ranitidine (65.5), furosemide (142.0), cotinine (54.4), Acetaminophen (170.5), sulfamethoxazole (45.3), diphenhydramine (29.4), hydrochlorothiazide (162.0), benzoylecgonine (27.4), azithromycin (36.0), lincomycin (33.1), trimethoprim (15.2), diltiazem (19.3), erythromycin (14.4), amphetamine (18.6), ciprofloxacin (24.8), oxycodone (13.7), triclosan (40.3), desmethyldiltiazole (8.0), amitriptyline (3.9), propranolol (3.0), cocaine (2.9), norfloxacin (18.6), prednisone (22.6), sulfadimethoxine (13.8), triclocarban (2.5), sertraline (0.9), verapamil (0.6), paroxetine (2.0), norfluoxetine (1.1), fluoxetine (1.7), norverapamil (0.2)
Comtois-Marotte <i>et al.</i> (2017)	Canada	Sulfamethoxazole (1.4), caffeine (208), benzoylecgonine (10.1), esethylatrazine (22.0), methylparaben (11.1), desvenlafaxine (34.4), carbamazepine (< 6.0), atrazine (21.0), venlafaxine (5.1), cocaine (4.0), diclofenac (2.0), oxazepam (1.3), bisphenol-A (60.0), progesterone (1.9), cholesterol (85.0), coprostan-3-ol (29.0)
Krogh <i>et al.</i> (2017)	Canada	Warfarin (37.4), amitriptyline (44.7), acetaminophen (1.53)
Dai <i>et al.</i> (2015)	China	Bezafibrate (4.7 - 72.7), caffeine (33.3 - 9785.0), carbamazepine (10.2 - 189.0), chloramphenicol (6.3 - 32.3), diclofenac (7.8 - 170.0), gemfibrozil (4.3 - 63.4), indomethacin (6.8 - 77.9), ketoprofen (39.1 - 509.0), mefenamic acid (3.7 - 9.9), metoprolol (11.3 - 535.0), nalidixic acid (7.0 - 116.0), propranolol (10.5 - 37.0), sulpiride (5.9- 435.0), trimethoprim (11.3 - 538.0), DEET (30.3 - 546.0)
Ma <i>et al.</i> (2016)	China	Diclofenac (2.1 - 230.5), mefenamic acid (0.6 - 11.4), ibuprofen (4.2 - 19.8), naproxen (0.8 - 3.9), metoprolol (1.1 - 1.6), PHO (1.8 - 22.5), caffeine (30.3 - 174.4), carbamazepine (0.8 - 6.4), venlafaxine (0.7 - 8.2), fluoxetine (1.6 - 40.2), DEET (3.1 - 16.6)
Sun <i>et al.</i> (2016)	China	Acetaminophen (0.8 - 12.5), ibuprofen 2.7 - 20.7), ketoprofen (5.6 - 36.6 ), fenoprofen (1.9 - 241), diclofenac (0.8 - 11.0), antipyrine (4.5 - 8.5), indomethacin (0.8 - 2.7) mefenamic acid (0.9 - 3.1), naproxen (0.5 - 1.8), enrofloxacin (1.4 - 4.5), oxytetracycline (15.0 - 16.9), ofloxacin (1.5 - 32.8), caffeine (8.1 - 3060.0), bisphenol A (10.6 - 925.0), propylparaben (0.4 - 69.9), methylparaben (1.4 - 68.8), triclosan (0.3 - 96.5), triclocarban (0.3 - 46.6), metoprolol (0.8 - 36.0), aspartame (1.4 - 16.6), benzophenone-3 (1.2 - 532.0), octocrylene (0.2 - 31.6), carbamazepine (1.0 - 3.8)
Peng <i>et al.</i> (2017)	China	4-nonylphenol (22.5 - 5050), 4-tert-octylphenol (39.4 - 165), bisphenol A (2.3 - 1314.0), triclocarban (2.4 - 210.0), triclosan (1.8 - 282.0), galaxolide (2.7 - 753.0), tonalide (20.7 - 126.0), musk xylene (12.1 - 43.8), musk ketone (4.2 - 98.2), clofibric acid (0.7 - 19.7), naproxen (0.6 - 4.3), diclofenac (8.0 - 645.0), indomethacin (1.3 - 69.6), ibuprofen (8.0 - 542.0), mefenamic acid (0.2 - 3.5), gemfibrozil (0.5 - 9.8)
Xie <i>et al.</i> (2017)	China	Erythromycin (7.5), ofloxacin (25.5), norfloxacin (25.1), ciprofloxacin (23.0), tetracycline (62.5), sulfamethoxazole (49.3), sulfamerazine (10.0), sulfadiazine (4.8). ibuprofen (39.5), diclofenac (13.0), naproxen (11.0), sertraline (5.0), clofibric acid (7.5), roxithromycin (13.0), carbamazepine (3.8), propranolol (15.5), 17 $\beta$ -estradiol (4.6), 17a-ethynodiol (4.1)
Asghar <i>et al.</i> (2018)	China	10-hydroxy-carbamazepine (1.1 - 54.1), caffeine (3.4 - 220.0), carbamazepine (< 0.3 - 7.0), clindamycin (< 3.3 - 31.1), cotinine (1.0 - 6.1), dextrorphan (0.2 - 3.6), fluconazole (0.8 - 20.6), irbesartan (< 1.7 - 18), lincomycin (4.7 - 31.1), metronidazole (< 0.3 - 5.1), metformin (0.2 - 121.4), metoprolol (0.5 - 10.8), metoprolol acid (2.1 - 203.3), nicotine (0.3 - 10.3), ofloxacin (1.9 - 2.3), paraxanthine (< 8.3 - 30.5), salbutamol (2.4 - 35.1), sulfamethoxazole (0.8 - 4.8), theobromine (< 8.3 - 155.2), trimethoprim (0.6 - 15.7), valsartan (4.2 - 140.6)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Li et al. (2018)	China	Sulfadiazine (0.28 - 726.0), sulphapyridine (0.5 - 367.0), sulfathiazole (0.03 - 108.0), trimethoprim (6.5 - 3231.0), sulfamerazine (3.1 - 50.7), sulfamethazine (0.5 - 2479.0), sulfamethoxazole (0.3 - 1697.0), tetracycline (2.4 - 468.0), oxytetracycline (5.0- 521.0), isochlorotetracycline (15.0 - 33.0), ciprofloxacin (2.3 - 459.0), norfloxacin (14.2 - 6620.0), ofloxacin (0.8 - 195.0), flumequine (23.3 - 463.0), spectinomycin (36.7 - 537.0), streptomycin sulfate (94.9 - 458), erythromycin (0.05 - 1246.0), anhydro erythromycin (63.1 - 1540.0), clarithromycin (0.8 - 603.0), roxithromycin (0.05 - 2260.0), amoxicillin (1.1 - 125.0), ampicillin (16.1 - 17.6), cephalixin (12.3 - 37.6), cefotaxime sodium salt (12.4 - 17.5), penicillin-G (2.2 - 85.8), thiampenicol (2.9 - 269.0), chloramphenicol (8.6 - 266.0)
Lin et al. (2018)	China	Sulfamethazine (< 0.8 - 60), sulfamethoxazole (< 8.5 - 100), sulfadiazine (< 0.6 - 68), trimethoprim (1.35 - 93.0), ofloxacin (< 7.0 - 23.0), flumequine (0.7 - 7.5), oxytetracycline (< 11.2 - 13), erythromycin (< 1.7 - 43.0), roxithromycin (1.4 - 190.0), clarithromycin (0.5 - 100.0), azithromycin (1.5-99.0), amoxicillin (4.6 - 710), cefotaxime (3.8 - 830), chloramphenicol (< 0.2 - 6.1), thiampenicol (< 0.4 - 12.0), florfenicol (1.6 - 23.0), ibuprofen (2.4 - 320.0), diclofenac (< 0.2 - 32.0), mefenamic acid (< 0.6 - 13.0), acetaminophen (0.9 - 16.0), indomethacin (1.7 - 2.7), antipyrine (< 0.6 - 4.3)
Lu et al. (2018)	China	Benzophenone-1 (0.2 - 9.0), benzophenone-3 (< LOQ - 21.4), methylparaben (1.4 - 3173.9), ethylparaben (< LOQ - 87.0), propylparaben (1.3 - 1040.4), isopropylparaben (0.6 - 428.7), butylparaben (< LOQ - 9.5), BTri (2.6 - 520.5), 5-TTri (0.7 - 72.1), XTri (0.4 - 15.6), triclosan (5.5 - 20.1), triclocarban (1.0 - 13.3), 4-OH-BP (< LOQ - 4.1)
Mei et al. (2018)	China	Bezafibrate (1.0 - 10.0), Caffeine, (8.3 - 1455), carbamazepine (10.0- 25.0), chloramphenicol (1.1 - 19.4), DEET (20.0 - 230.0), diclofenac (1.0 - 19.0), gemfibrozil (1.0 - 5.0), indomethacin (1.0 - 15.0), sulpiride (5.0 - 40.0), trimethoprim (2.1 - 65.4)
Sun et al. (2016)	China	Chloramphenicol (0.1 - 0.5), erythromycin (0.1 - 8.5), florfenicol (0.1 - 1.8), ofloxacin (0.1 - 1.1), roxithromycin (0.1 - 47.5), sulfadiazine (0.2 - 29.1), sulfamethazine (0.1 - 106.9), sulfamethoxazole (0.6 - 3.4), sulfachloropyridazine (2.1 - 2.9), sulfapyridine (0.1 - 30.1), thiampenicol (0.2 - 0.7), trimethoprim (0.04 - 0.6), tylosin (0.2 - 21.0).
Zhang et al. (2018)	China	Sulfadiazine (0.7 - 24.4), sulfamethazine (0.9 - 13.9), sulfamethoxazole (0.9 - 9.8), trimethoprim (1.0 - 7.2), norfloxacin (1.8 - 97.3), ciprofloxacin (2.4 - 182.0), enrofloxacin (1.7 - 2.3), ofloxacin (< 1.7 - 1.9), clarithromycin (0.1 - 2.1), erythromycin (0.2 - 45.8), chloramphenicol (5.2 - 9.6)
Yao et al. (2018)	China	DEET (3.6 - 1660), methylparaben (3.9 - 45.0), ethylparaben (0.1 - 31.2), propylparaben (1.9 - 5.6), butylparaben (0.4 - 5.1), triclocarban (1.5 - 108.0), triclosan (4.4 - 37.4).
Chen et al. (2018)	China	Enrofloxacin (5.8 - 100.0), erythromycin (80.0 - 1400.0), lincomycin (5.9 - 16.0), sulfamethoxazole (9.5 - 2100), sulfamethazine (4.5 - 120.0), trimethoprim (140.0 - 180.0)
Hanna et al. (2018)	China	Sulfapyridine (0.2 - 3.1), sulfamethoxazole (0.3 - 13), ciprofloxacin (0.2 - 19), enrofloxacin (0.2 - 52), levofloxacin (0.3 - 6), norfloxacin (0.2 - 78), florfenicol (1.6 - 15), doxycycline (2 - 3.5), metronidazole (0.4 - 1.6),
He et al. (2018)	China	Sulfamethoxazole (2.1 - 7.1), sulfamonomethoxine (2.1 - 4), sulfaquinoxaline (0.7 - 3.9), ciprofloxacin (0.1 - 0.5), enrofloxacin, (2.4 - 7.3), amoxicillin (3 - 12.3), doxycycline (4.2 - 15.3), florfenicol (1.9 - 3.3), lincomycin (4.8 - 10.1), ibuprofen (4.3 - 14.3), naproxen (0.1- 0.4), acetaminophen (2.6 - 6), diclofenac (2.5 - 10.5), caffeine (2.2 - 26.3), estrone (4.2 - 17.5), estradiol (1.5 - 5.2), estriol (14.7 - 26.9), triclosan (0.2 - 1.5), methyl triclosan (3.2 - 10.3)
Cui et al. (2019)	China	Bezafibrate (0.2 - 1.4), caffeine (0.4 - 26.8), carbamazepine (0.04 - 0.6), clofibric acid (0.02 - 0.3), DEET (0.1 - 33.7), diclofenac (0.3 - 7.2), gemfibrozil (0.03 - 0.3), indomethacin (0.1 - 4.7), ketoprofen (0.02 - 0.7), propranolol (0.004 - 0.1), naproxen (0.1 - 0.9), tamoxifen (0.004 - 0.1), triclosan (0.2 - 3.4), triclocarban (0.03 - 0.3)
Xie et al. (2019)	China	Sulfamethoxazole (0.7), trimethoprim (0.3), norfloxacin (6.1), ofloxacin (5.5), acetaminophen (0.02), ketoprofen (0.06), diphenhydramine (0.02)
Cao et al. (2020)	China	Clofibric acid (0.06 - 0.5), diclofenac (0.4 - 22.7), ibuprofen (< 0.2 - 13.0), ketoprofen (0.2 - 19.4), naproxen (0.3 - 1.6), sulfadimethoxine (0.06 - 27.6), sulfamethazine (5.0 - 59.5), sulfamethoxazole (0.1 - 1.3), sulfapyridine (0.4 - 2.4), triclosan (0.3 - 6.4), triclocarban (< 0.2 - 0.84)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Pan et al. (2020)	China	Azithromycin (2.1 - 9.3), ciprofloxacin (9.0 - 57.0), clarithromycin (1.8 - 9.9), clindamycin (2.2 - 10.0), dafloxacin mesylate (1.9 - 45.0), difloxacin (2.3 - 41.0), enrofloxacin (1.0 - 33.0), erythromycin (2.5 - 74.0), fluoroquine (1.3 - 3.7), lincomycin (2.2 - 11.0), lomefloxacin (2.3 - 35.0), marbofloxacin (1.7 - 32.0), norfloxacin (6.9 - 71.0), ofloxacin (1.8 - 38.0), roxithromycin (2.4 - 7.7), sulfadiazine (1.0 - 5.0), sulfamethiadiazole (4.8 - 5.1), sulfamethazine (2.1 - 3.1), sulfamethoxazole (2.5 - 6.7),
Zhang et al. (2020)	China	Dextromethorphan (2.6), diprophylline (5.4), formoterol (16.3), salbutamol (1.7), ambroxol (7.8), glibenclamide (9.5), gliclazide (8.0), glimepiride (1.2), glipizide (0.9), repaglinide (0.7), tolbutamide (4.3), acarviosin (1.1), atenolol (< LOQ), losartan (24.4), metoprolol (156), propranolol (4.5), sotalol (12.4), irbesartan (694), telmisartan (515), amlodipine (7.5), diltiazem (1.4), nifedipine (149), metoprolol Acid (517), dehydronifedipine (25.5), sildenafil (5.5), chloramphenicol (13.2), clindamycin (2.7), lincomycin (2.4), azithromycin (69.3), clarithromycin (19.9), erythromycin (16.2), roxithromycin (21.2), climbazole (129.0), fluconazole (116.0), miconazole (10.5), thiabendazole (3.2), triclocarban (29.8), triclosan (6.5), flumequin (1.6), moxifloxacin (6.3), nalidixic acid (17.4), oxolinic acid (11.2), sulfachloropyridazine (0.6), sulfadiazine (4.0), sulfamerazine (0.9), sulfamethazine (7.9), sulfamethoxazole (92.6), sulfaphenazole (0.6), sulfapyridine (32.8), sulphacetamide (2.2), trimethoprim (10.3), cefadroxil (3.8), cefotaxime (29.4), ceftazidime (181), cefuroxime (< MQL), cephadrine (3.1), ampicillin (22.2), diclofenac Acid (9.6), indomethacine (4.1), ketoprofen (50.9), phenazone (4.9), acetaminophen (4.2), aminophenazone (2.4), diazepam (7.5), oxazepam (25.0), zolpidem (0.3), doxepin (2.3), fluoxetine (7.7), imipramine (4.4), sertraline (4.2), sulpiride (35.4), venlafaxine (32.5), O-desmethyl venlafaxine (59.5), carbamazepine (23.0), gabapentin (2,067), levetiracetam (95.4), oxcarbamazepine (20.0), 10,11-Dihydro-10,11-Epoxy carbamazepine (35.9), 10,11-Dihydro-10-Hydroxycarbamazepine (4.8), 10,11-Dihydroxy Carbamazepine (4.0), levetiracetam Acid (86.2), codeine (3.3), diphenhydramine (21.5), omeprazole (3.1), clofibric acid (5.3), lidocaine (48.8), paraxanthine (19.4), normorphine (6.7), cotinine (20.4), caffeine (6.2)
Yang et al. (2020)	China	Roxithromycin (5.3 - 120.5), ofloxacin (27.4 - 76.3), norfloxacin (6.4 - 9.0), ciprofloxacin (13.3 - 28.7), sulfamethoxazole (13.7 - 18.2), ibuprofen (8.0), diclofenac (1.8 - 13.7), bezafibrate (1.0 - 4.3), caffeine (2.5 - 257.4), fluoxetine (0.8 - 1.4), citalopram (0.7 - 3.4), sertraline (0.7 - 1.0), ketoconazole (4.8 - 77.8), clozapine (1.0 - 4.5), quetiapine (0.3 - 2.5), aripiprazole (319.9 - 842.9), carbamazepine (1.0 - 20.2), EHMC (4.5 - 7.9), homosalate (1.1 - 3.1), benzophenone-4 (9.2 - 24.4), benzophenone-3 (3.1 - 12.0), octocrilene (0.4 - 0.9), 2-phenyl benzimidazole-5-sulfonic acid (3.6 - 68.8), avobenzone (0.7 - 2.3)
Chen et al. (2021)	China	Ribavirin (1.04 - 52.2), Sulfadimidine (0.12 - 8.91), Sulfamethoxazole (1.12 - 16.6), Sulfadiazine (0.10 - 9.14), Sulfamonometoxine (0.53 - 17.8), Sulfachloropyridazine (0.59 - 8.15), Sulfaquinoxaline (0.17 - 1.08), Sulfadimethoxine (0.18), Sulfamethizole (1.36), Sulfamerazine (0.11), Norfloxacin (0.49 - 4.51), Ofloxacin (21.0 - 172), Erythromycin (0.06 - 12.9), Azithromycin (1.98 - 935), Clarithromycin (0.18 - 266), Tilmicosin (1.26 - 11.3), Tylosin (2.14), Triamcinolone acetonide (0.28 - 0.89), Hydrocortisone (0.64 - 2.18), Budesonide (6.65 - 15.5), Beclomethasone (32.5), Hydrocortisone 17-valerate (1.17), Prednicarbate (0.27), Mometasone furoate (10.8), Cortisone (0.47 - 3.69), Fludrocortide (2.86 - 5.36), Fluoromethalone (0.66 - 0.67)
Jiang et al. (2021)	China	Sulfadiazine (0.09 - 5.61), sulfathiazole (0.14 - 18.5), sulfamerazine (0.12 - 11.6), sulfisomidin (0.12 - 0.95), sulfamethoxypyridazine (0.11 - 51.3), sulfaquinoxaline (0.43 - 2.07), sulfamethazine (0.09 - 22.4), sulfadimethoxine (1.97 - 15.6), sulfamethoxazole (0.13 - 262), sulfamethizol (0.08 - 5.15), sulfamonometoxine (0.07 - 112), sulfachloropyridazine (0.58 - 596), trimethoprim (1.5 - 24.8), Ddifloxacin (0.59 - 48.4), danofloxacin (2.25 - 46.6), marbofloxacin (0.21 - 16.1), sarafloxacin (1.52 - 69), lomefloxacin (0.24 - 21.1), sparfloxacin (0.21 - 10.1), pefloxacin (0.20 - 33.26), oxolinic acid (0.1 - 19.2), nalidixic acid (1.49 - 34.5), ciprofloxacin (0.98 - 119), enrofloxacin (0.26 - 23.6), norfloxacin (1.47 - 85.4), ofloxacin (0.22 - 14.3), flumequine (0.13 - 4.65), florfenicol (3.55 - 227), monensin (0.09 - 18.6), thiampenicol (5.73 - 282), tiamulin (0.03 - 46.1), chloramphenicol (0.62 - 1.61), oxytetracycline (0.13 - 7.98), chlorotetracycline (0.13 - 7.83), penicillin G (0.29 - 5.39), erythromycin (6.57 - 34.3), clarithromycin (0.12 - 8.42), roxithromycin (0.38 - 44.6), clindamycin (1.47 - 58.8), lincomycin (1.81 - 63.7), diclofenac acid (0.26 - 69.9), infomethacine (0.22 - 20.4), ketoprofen (6.37 - 110), mefenamic acid (0.24 - 35.4), bezafibrate (0.31 - 10.1), clorfibric acid (0.47 - 2.12), gemfibrozil (0.70 - 2.12), propranolol (0.16 - 7.89), carbamazepine (1.11 - 32.3), DEET (13.5 - 108), sulpiride (1.89 - 404), metoprolol (0.94 - 44.5), caffeine (13.9 - 647), ibuprofen (0.87 - 259), acetaminophen (0.99 - 88.4)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Li <i>et al.</i> (2021)	China	Sulfadiazine (0.2 - 6.33), sulfamethoxazole (0.47 - 94.91), erythromycin (3.44 - 13.84), roxithromycin (0.46 - 3.67), naproxen (0.44 - 2.52)
Sun <i>et al.</i> (2021)	China	Et-PABA, benzophenone-3, 4MBC, EHMC, BM-DBM, octocrylene, benzophenone-1, benzophenone-4, acetaminophen, caffeine, sulfamethoxazole, diphenhydramine, trimethoprim, indometacin, erythromycin (242.21), ibuprofen, clofibrate acid, naproxen, chloramphenicol
An <i>et al.</i> (2022)	China	acetaminophen (5.00 - 89.49), bezafibrate (0.29 - 7.70), clofibrate acid (0.49 - 7.05), carbamazepine (0.08 - 25.28), caffeine (82.90 - 893.88), DEET (0.30 - 151.90), diclofenac acid (5.73 - 506.92), gemfibrozil (0.88 - 83.43), mefenamic acid (0.55 - 50.70), metoprolol (2.40 - 114.33), propranolol (0.95 - 29.96), sulpiride (0.01 - 363.96), clarithromycin (0.3 - 54.86), clindamycin (1.18 - 12.90), chloramphenicol (0.7 - 19.51), erythromycin (0.07 - 5.68), lincomycin (2.75 - 76.48), nalidixic acid (2.32 - 99.09), roxithromycin (0.9 - 29.80), sulfadiazine (1.5 - 122.03), sulfadimethoxine (0.02 - 10.13), sulfisomidine (0.23 - 3.99), sulfamonomethoxine (0.12 - 17.18), sulfamethoxypyridazine (0.02 - 17.18), sulfamerazine (0.06 - 1.18), sulfamethazine (0.25 - 5.73), sulfamethoxazole (11.83 - 201.80), sulfamethizole (0.13 - 5.73), sulfaquinoxaline (0.52 - 20.23), sulfathiazole (0.08 - 1.23), trimethoprim (1.1 - 84.33), Tylosin tartrate (0.23 - 3.28)
Lu <i>et al.</i> (2022)	China	p-Hydroxybenzoic (17.5 - 521), triclosan (<0.16 - 135), Butylated hydroxyanisole (11.89 - 27.7), Methylparaben (1.83 - 44.3), Ortho-phenylphenol (2.39 - 167), Propylparaben (0.82 - 24.9), trilocarban (<0.23 - 77), Ethylparaben (1.04 - 11.8), Butylparaben (< 0.007 - 2.14)
Ma <i>et al.</i> (2022)	China	Carbamazepine (16.1 - 24.6), DEET (82.5 - 152), nalidixic acid (<1.0 - 8.52), caffeine (156 - 1423), trimethoprim (< 0.2 - 31.1), bezafibrate (3.29 - 6.67), chloramphenicol (<0.2 - 9.03), gemfibrozil (<0.2 - 2.91), indometacin (<0.2 - 46.1).
Wang <i>et al.</i> (2022)	China	Sulfamethoxazole (0.26 - 35.77), Sulfathiazole (0.17 - 42.66), Sulfadiazine (0.09 - 1.12), Sulfamethazine (0.17 - 72.45), Sulfamerazine (0.09 - 1.12), Sulfamethizole (0.14 - 0.42), Sulfadimethoxine (0.26 - 7.01), Sulfoxazole (0.19 - 330.80), Tetracycline (0.34 - 0.88), Oxytetracycline (0.34 - 5.92), Chlortetracycline (0.33 - 5.95), Doxycycline (0.36 - 9.40), Norfloxacin (0.33 - 25.52 ), Ofloxacin (0.21 - 43.63), Ciprofloxacin (0.42 - 21.56), Enrofloxacin (0.21 - 16.79), Lomefloxacin (0.21 - 0.44), Tiamulin (0.01 - 7.26), Roxithromycin (0.04 - 45.30), Clarithromycin (0.07 - 5.74), Erythromycin (0.53 - 298.32), Azithromycin (0.16 - 28.95), Tylosin (0.38 - 3.53), Metoprolol (0.13 - 31.74), Propranolol (0.15 - 4.20), Bezafibrate (0.13 - 9.15), Carbamazepine (0.05 - 18.05), Caffeine (0.19 - 608.40), Trimethoprim (0.03 - 79.04)
Xu <i>et al.</i> (2022)	China	sulfadiazine, sulfapyridine, sulfathiazole, trimethoprim, sulfamethazine , sulfamethoxazole, naproxen, paracetamol (23.7–86.5), diclofenac acid, ibuprofen, ketoprofen (< LQ - 292.8), flumequine, ciprofloxacin, norfloxacin, ofloxacin, clarithromycin, roxithromycin (13.7–141.9), erythromycin (14.4–73.1), oxytetracycline, isochlortetracycline, tetracycline, cephalexin monohydrate, cefotaxime sodium, chloramphenicol, and thiamphenicol, trilocarban, triclosan, carbamazepine, spectinomycin, gemfibrozil, diltiazem, diphenhydramine, bisphenol A
Bedoya-Ríos <i>et al.</i> (2018)	Colombia	Primidone (180 - 340), carbamazepine (310 - 36920), trimethoprim (210 - 3580), fluoxetine (20 - 100), Bisphenol A (100 - 76820), 4-t-octylphenol (260 - 1200), estrone (200 - 570), profesterone (20 - 160)
Pemberthy <i>et al.</i> (2020)	Colombia	Triclosan (100 - 790), ibuprofen (120 - 460), diclofenac (120 - 1540)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Causanilles <i>et al.</i> (2017)	Costa Rica	Benzoyllecgonine (4 - 3440), Codeine (10 - 252), Morphine (30 - 36), Acetaminophen, Atenolol, Furosemide, Gemfibrozil, Irbesartan, Naproxen, Sulphapyridine, Sulfamethoxazole, Telmisartan, Salicylic acid, Valsartan, 4-Acetyl aminoantipyrine, 4-Formyl amino antipyrine, Clopidogrel carboxylic acid, Caffeine, Acesulfame, Saccharin, Sucralose, Benzophenone-3
Koba <i>et al.</i> (2018)	Czech Republic	Diclofenac (22.0 - 870), atenolol (0.9 - 310.0), metoprolol (12.0 - 550.0), clarithromycin (< 4.9 - 370.0), erythromycin (1.3 - 46.0), sulfamethoxazole (22.0 - 340.0), carbamazepine (290.0 - 560.0), citalopram (2.2 - 93.0), sertraline (< 0.3 - 9.1), venlafaxine (11.0 - 580.0), metoprolol acid (490.0 - 990.0)
Voloshenko-Rossin <i>et al.</i> (2015)	Ecuador	Acesulfame (700 - 31000), carbamazepine (11500 - 830000), acrinide (5300 - 12500), acridone (2000 - 26700), 10-OH-CBZ (4100-212000), caffeine (2000 - 5597000), sulfamethoxazole (1000 - 309000), venlafaxine (1000 - 400000), O-desmethylvenlafaxine (5500 - 590000), cocaine(5500 - 560000), benzoyllecgonine (33500 - 1065000), 17b-estradiol (100 - 1400), estrone (300 - 11400), ethinylestradiol (300)
Wilkinson <i>et al.</i> (2018)	England	Acetaminophen (21.9), diclofenac (50.6), bisphenol-S (14.7), bisphenol-A (159.0)
Kötke <i>et al.</i> (2019)	German	Aprimidone (1.9 - 49.1), bezafibrate (0.2 - 6.0), carbamazepine (2.0 - 162.0), clarithromycin (0.04 - 8.1), diclofenac (0.1 - 27.1), erythromycin (0.02 - 3.9), iohexol (0.3- 39.2), iomeprol (1.0 - 488.0), iopamidol (0.5 - 60.5), iopromide (0.4 - 124), lincomycin (0.01 - 0.5), propranolol (0.07 - 0.7), roxithromycin (0.04 - 2.7), sulfadimethoxine (0.04 - 0.5), sulfamethoxazole (0.7 - 42.5).
Díaz-Cruz <i>et al.</i> (2019)	Greece	Benzophenone-3 (0.2 - 2031.0), benzophenone-8 (21.0), 4MBC (63.7)
Huber <i>et al.</i> (2016)	Greenland	Acetaminophen (<20.8 - 93.0), salicylic acid (< 41.7 - 6050.0), diclofenac (1.45 - 30.1), ibuprofen (1.0 - 872.0), naproxen (< 1.0 - 872.0), lidocaine (< 0.4 - 45.9), metformin (< 2.1 - 164.0), metoprolol (< 0.5 - 33.1), atenolol (< 20.8), furosemide (< 4.2 - 48.6), amiloride (< 3.0 - 398.0), citalopram (< 0.4 - 6.3), venlafaxine (< 0.4 - 7646.0 )
Khalid <i>et al.</i> (2018)	India	16-Hydroxyhexadecanoic acid (325.0), benzophenone (50.0), lignocaine (< 20.8), metoprolol (22.5), 2-Dodecyl benzene sulfonic acid (1012.0), mefenamic acid (680.0), β-Estradiol (< 75.9), oxybenzone (< 200.0 ), diisobutyl phthalate (< 29.4)
Kumar <i>et al.</i> (2019)	India	Acetaminophen (6.0 - 5967.0), caffeine (35.0 - 22733.0), carbamazepine (3.0 - 75.0), crotamiton (8.0), theophylline (277.0 - 2939.0)
Sharma <i>et al.</i> (2019)	India	Acetaminophen (0.6 - 4.2), caffeine (36.0 - 743.0), carbamazepine (0.1 - 16.1), ciprofloxacin (4.8 - 28.8), diclofenac (1.4 - 41.3), DEET (1.9 - 22.3), hydrochlorothiazide (0.03 - 4.1), ketoprofen (1.7 - 107.0), naproxen (0.7 - 2.6), sulfamethoxazole (0.4 - 27.5), triclocarban (0.7 - 3.3), triclosan (1.4 - 5.4 ).
Biswas and Vellanki (2021)	India	Caffeine (74.8 - 6489.9), Naproxen (340.8 - 1576.3), Enrofloxacin (40.2 - 59.8), Gemfibrozil (48.2 - 2990.4), Testosterone (52.6 - 284.5), Carbamazepine (119.2 - 484.1), Sulfamethoxazole (48.5 - 1312.3), Atenolol (44.4 - 205.6), Ketoprofen (133.7 - 1381.2), Estrone (10.7 - 1781.8), 2-Hydroxybenzothiazole (206 - 591.9), Progesterone (95.1 - 291.3), Triclosan (25.5 - 269.8), Diclofenac (96.1 - 278.9), Trimethoprim ( 64.5 - 8807.6), Ciprofloxacin (115.1 - 263.5)
Gopal <i>et al.</i> (2021)	India	Sulphamethoxazole (18.2 - 108), chloramphenicol (8.4 - 218), diclofenac (<LOQ - 1130), propranolol (9.22 - 89), ibuprofen (73.1 - 1834), 2,4 dihydroxy benzophenone (3.43 - 46.1), oxybenzone (27.2 - 112), bisphenol A (26.4 - 88), triclosan (297 - 1761), triclocarban (<LOQ)
Khan <i>et al.</i> (2021)	India	Ofloxacin (1565), carbamazepine (183.1), diclofenac (556.1), inuprofen (223.4), simvastatim (412.9), erythromycin (178.1), furosemide (312.2), diazepam (457.8)
Singh and Suthar (2021)	India	Caffeine (29.6 - 1104.8), acetaminophen (6.81 - 247.0), ibuprofen (372.1), DEET (5.91 - 123.5), triclosan (139.0), ketoprofen (245.0), tetracycline (1.25 - 98.6), salicylic acid (65.4), erythromycin (33.1), metoprolol (24.4), ciprofloxacin (26.8), b-estradiol (12.26), ofloxacin (1.36)
Renganathan <i>et al.</i> (2021)	India	Carbamazepine (4.26 - 976.46), Atenolol (<LOQ - 84.80), isoprenaline (<LOQ - 36.4), perindopril (<LOQ - 46.08), verapamil (<LOQ - 16.87), diclofenac (0.85 - 293.21), ibuprofen (<LOQ - 76.15), ciprofloxacin (<LOQ - 87.38), triclosan (<LOQ - 46.61), caffeine (11.01 - 1258.90)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Kumar <i>et al.</i> (2022)	India	Acetaminophen (<20 - 16697), Theophylline (<46 - 8965), Caffeine (54 - 44008), Carbamazepine (<0.17 - 102), Crotamiton (<1 - 13.5)
McEneff <i>et al.</i> (2014)	Ireland	Carbamazepine (90.0 - 3160.0), diclofenac (60.0 - 1690.0), gemfibrozil (90.0 - 650.0) mefenamic acid (80.0 - 1550.0) trimethoprim (70.0 - 1200.0)
Rodríguez <i>et al.</i> (2015)	Island	Benzophenone-3 (12.7 - 3316.7), 4-methylbenzylidene Camphor - 4-MBC (4.1 - 1043.4), diethylamino hydroxybenzoyl hexyl benzoate - DHHB (< 1.3 - 228.7), octocrylene (30.7 - 1324.9), EHMC (< 1.6 - 756.4), homosalate (9.2 - 536.2), butyl methoxydibenzoyl methane - BMDBM (19.8 - 1770.3)
Mandaric <i>et al.</i> (2017)	Italy	Codeine (9.7 - 40.0), piroxicam (41.7 - 42.2), indomethacine (21.7 - 28.5), ketoprofen (104.0 - 193.0), acetaminophen (1.4 - 226.0), ibuprofen (15.8 - 116.0), salicylic acid (4.6 - 244.0), diclofenac (27.7 - 675.0), naproxen (22.5 - 73.1), bezafibrate (7.6 - 10.3), atorvastatin (12.5 - 21.7), gemfibrozil (4.5 - 19.1), carbamazepine (25.8 - 137.0), citalopram (0.9 - 93.0), venlafaxine (4.7 - 197.0.), propranolol (52.9 - 57.0), atenolol (2.6 - 18.1), sotalol (3.3 - 49.4), metoprolol (1.4 - 57.7), hydrochlorothiazide (5.8 - 189.5), losartan (11.9 - 149.0), irbesartan (0.6 - 149.0), valsartan (1.8 - 344.0), levamisole (6.0 - 9.4), dilitiazem (5.3 - 10.5), verapamil (16.5 - 20.8), norverapamil (62.0 - 65.5), trimethoprim (0.9 - 196.0), erythromycin (7.4 - 91.9), sulfamethoxazole (1.0 - 106.7), clarithromycin (9.1 - 159.0), BP3 (1.6 - 5720.0), ODPABA (33.2 - 748.0), Et-PABA (6.3 - 88.6), BZT (22.0 - 84.7), MeBZT (3.3 - 24.6), DMeBZT (3.0 - 32.0), TBHPBT (3.6 - 172.0), UVP (14.2 - 124.0), UV328 (52.7 - 669.0), UV329 (43.9 - 553.0), Celestolide (8.4 - 74.3), EPB (46.7 - 171.0)
Feo <i>et al.</i> (2020)	Italy	Amoxicillin(12 - 175), Clarithromycin (4 - 441), Ciprofloxacin (95 - 836), Ofloxacin (61 - 5610), atenolol (5 - 451), Enalapril (0.5 - 96.5), Enaprilat (0.5 - 228), Irbesartan (11 - 623), Ramipril (0.3 - 7.5), Ramiprilat (5.6 - 540), Valsartan (414 - 9560), Losartan (1.5 - 179), Furosemide (1 - 774), Hydrochlorothiazide (0.4 - 6.6), acetaminophen (1.2 - 12125), Diclofenac (0.5 - 441), Ibuprofen (3 - 2550), Ketoprofen (1.4 - 1410), Naproxene (6.1 - 349), Carbamazepine (3.3 - 123), Dihydrocarbamazepine (7.8 - 622), estrone (4.2 - 47.7), Rosuvastina (19.3 - 120.3), Gemfibrozil (360.1), Atorvastatin (0.2 - 35.1), Ranitidine (36.4 - 3392.2)
Cappelli <i>et al.</i> (2022)	Italy	acetaminophen (137.0 - 7185), amisulpride (52 - 76320), carbamazepine (52 - 153), darunavir (55 - 577), Hydroxylchloroquine (128), irbersartan (58 - 908), metropolol (52 - 868), azithromycin (110 - 3297), ciprofloxacin (86 - 3541), clarithromycin (55 - 189), erythromycin (63), norfloxacin (90 - 560), ofloxacin (65 - 453), trimethoprim (53 - 75), caffeine (57 - 5353), methyl-benzotriazole (53 - 2294)
Kairigo <i>et al.</i> (2020)	Kenya	Amoxicillin (50 - 900), ciprofloxacin (< 10 - 1300), doxycycline (< 135 - 2700), norfloxacin (< 8 - 2200), sulfamethoxazole (60 - 56600), trimethoprim (< 7 - 200)
Kandie <i>et al.</i> (2020)	Kenya	10,11-Dihydro-10,11-dihydroxycarbamazepine (115.0 - 571.0), 10,11-Dihydro-10-hydroxycarbamazepine (51.0 - 255.0), 4-(Dimethylamino)pyridine (4.0 - 25.0), acesulfame (28.0 - 783.0), acetaminophen (38.0 - 680.0), acetyl-sulfamethoxazole (20.0 - 24904.0), atrazine (3.0 - 13.0), carbamazepine (4.0 - 14.0), cotinine (2.0 - 28.0), DEET (3.0 - 28.0), diphenhydramine (13.0 - 315.0), fluvoxamine (6.0 - 467.0), metoprolol acid (20.0 - 376.0), N-Ethyl-o-toluenesulfonamide (5.0 - 1899.0), pravastatin (8.0 - 178.0), propranolol (12.0 - 40.0), propyphenazone (1.0 - 17.0), saccharin (43.0 - 466.0), sulfadimethoxine (8.0 - 205.0), sulfamethoxazole (4.0 - 297.0), triclocarban (2.0 - 28.0), triclosan (11.0), trimethoprim (7.0 - 110.0)
Park and Jeon (2021)	Korea	Antipyrene (<LOQ - 4), Mefenamic acid (<LOQ - 23), Naproxen (<LOQ - 18), Niflumic acid (54 - 768), Lidocaine (<LOQ - 37), Lincomycin (<LOQ - 70), Sulfadiazine (<LOQ - 5), Sulfamerazine (<LOQ - 19), Sulfamethazine (<LOQ - 7), Sulfamethoxazole (<LOQ - 33), Sulfapyridine (4 - 83), Sulfathiazole (<LOQ - 9), Trimethoprim (<LOQ - 27), Carbamazepine (25 - 480), Carbamazepine-10,11-epoxide (<LOQ - 88), Lamotrigine (<LOQ - 230), Oxcarbazepine (<LOQ - 8), Amisulpride (<LOQ - 41), Fluoxetine (62), O-desmethylvenlafaxine/tramadol (4 - 447), Sulpiride (9 - 215), Venlafaxine (<LOQ - 6), metformin (42 - 972), sitagliptin (<LOQ - 56), Climbazole (2 - 40), Fluconazole (9 - 45), Cetirizine (7 - 193), Diphenhydramine (15 - 128), Fexofenadine (6 - 243), Atenolol (<LOQ - 19), Bisoprolol (<LOQ - 11), Irbesartan (<LOQ - 5), Losartan (<LOQ - 47), Metoprolol acid (<LOQ - 58), Valsartan (<LOQ - 132), Valsartan acid (<LOQ - 224), Telmisartan (<LOQ - 328), Cimetidine (<LOQ - 31), Ranitidine (<LOQ - 52), Oseltamivir (<LOQ - 17), Caffeine (19 - 353), DEET (2 - 199), benzophenone (<LOQ - 146)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Wee <i>et al.</i> (2019)	Malaysia	17 $\alpha$ -ethynylestradiol (< 0.35 - 0.88), 17 $\beta$ -estradiol (< 0.17 - 0.2), bisphenol A (1.2 - 8.2), caffeine (2.1 - 19.3), ciprofloxacin (< 0.05 - 5.99), dexamethasone (0.4 - 1.96), diclofenac (2.1 - 6.1), estrone (0.1 - 0.2), primidone (0.1 - 0.35), progesterone (< 0.02 - 0.03), propranolol (0.02 - 0.23), sulfamethoxazole (0.05 - 0.23), testosterone (< 0.02 - 0.04)
Ismail <i>et al.</i> (2019)	Malaysia	Testosterone (0.51 - 2.3), Progesterone (<0.41 - 0.46), Dexamethasone (<1.00 - 1.51), Propranolol (<0.25 - 0.34), Caffeine (0.13 - 0.33), Diclofenac (<0.47 - 79.89), Chloramphenicol (<0.05 - 0.09), Estrone (<0.56 - 1.95), 17 $\beta$ -estradiol (<5.28 - 31.43), 17 $\alpha$ -ethynylestradiol (<0.30 - 7.67), Bisphenol A (0.19 - 0.47)
Rivera-Jaimes <i>et al.</i> (2018)	Mexico	Acetaminophen (345 – 4460), Diclofenac (258 – 1398), Ibuprofen ( 184 – 1106), Indomethacin (25 – 362), Naproxen (732 – 4880), Salicylic acid (33 – 664), Sulfamethoxazole (76 – 722), Trimethoprim (34 – 120), Atenolol (4 – 32), Bezafibrate (286 – 2100), Gemfibrozil (9 – 368), Carbamazepine (8 – 276)
Chafi <i>et al.</i> (2022)	Morocco	Acetylsalicylic acid (20 - 351), Paracetamol (1.2 - 220), Diclofenac (15 - 147), Flunixin (2.3 - 55), Ibuprofen (24 - 274), Ketoprofen (30 - 198), Mefenamic acid (17 - 351), Naproxen (13 - 197), Niflumic acid (10 - 112), Phenylbutazone (13 - 201), Clofibrate acid (2.5 - 104), Carbamazepine (19 - 221), Metoprolol (1.5 - 41), Propranolol (25 - 55), Chloramphenicol (32 - 178), Florfenicol (3.2 - 165), Thiamphenicol (1.1 - 179), Estrone (5 - 277), 17 $\beta$ -Estradiol (21 - 200), 17 $\alpha$ -Ethynylestradiol (6 - 89), 2-Phenylphenol (31 - 178), 4-Phenylphenol (54 - 257), 4-tert-Octylphenol (53 - 368), Nonylphenol (11-200), Bisphenol A (15 - 302), Triclosan (49 - 301)
Bernot <i>et al.</i> (2019)	New Zealand	Caffeine (74 - 77), carbamazepine (9.7 - 26 ), cotinine (7.4 - 24), DEET (5.5 - 510)
Inam <i>et al.</i> (2015)	Nigeria	Acetaminophen (BDL - 30.1), bisphenol A (1.6–59.2), caffeine (3.0–32.4), carbamazepine (BDL–0.04), chloramphenicol (BDL–45.2), ciprofloxacin (BDL–4.6), DEET (BDL–5.9), diclofenac (BDL–3.67), equilin (BDL–3.9), Erythromycin (BDL–11.4), lincomycin (BDL–43.8), benzophenone-3 (1.0–1.2), roxithromycin (BDL–25.2), sulfamethoxazole (BDL–2.8), sulfathiazole (BDL–0.7), triclocarban (35.6–232.4), triclosan (55.1–297.7),
Ebele <i>et al.</i> (2020)	Nigeria	Metformin (<0.5-1760), Acetaminophen (1-12430), Gabapentin (<1-67), Nicotine( <7-9340), Codeine (<2-1780), Sulfamethoxazole (<1-3180), Caffeine (<4-1080), Trimethoprim (2-388), Amoxicillin (87-272150), Tramadol (<2-852), Metoprolol (<1-168), Propranolol (<1-12), Carbamazepine (<1-342), Hydrocortisone (<3-471), Erythromycin-H2O (<1-275), DEET (5-1350) Oxazepam (<2-1220), Mefloquine HCl (<1-58), Naproxen (<3-2120), Valsartan (<1-3330), Diazepam (<0.3-42), Glyburide (<3-326), Diclofenac (<1-200), Ibuprofen (<4-2740), Clotrimazole( <1-618), Meclofenamic acid (<1-2000), Gemfibrozil (<4-552),
Hu <i>et al.</i> (2021)	Nigeria	Metformin (0.090 - 1198.2), acetaminophen (9.38 - 155400), ranitidine (0.4 - 0.46), caffeine (1.99 - 12499), fluconazole (0.07 - 0.19), tramadol (0.06 - 0.57), sulphamethoxazole (0.2 - 3348.39), acesulfame (0.12 - 7.89), hydrochlorothiazide (0.33 - 0.45), furosemide (0.7 - 0.76) ( $\mu$ g L <sup>-1</sup> )
Ashfaq <i>et al.</i> (2019)	Pakistan	Acetaminophen (22 - 450), ibuprofen (3.2 - 18), ketoprofen (20 - 98), fenoprofen (0.27 - 0.52), diclofenac (0.6 - 2.8 ), antipyrine (0.37 - 7.8), propyphenazone (0.6 - 0.7), indomethacin (n. d. - 0.3), mefenamic acid (9.7 - 34), naproxen (3.3 - 20), sulfamethoxazole (0.90 - 1.2), sulfamethazine (n. d. - 3.4), oxytetracycline (n. d. - 29), ofloxacin (15 - 20), ciprofloxacin (26 - 31), norfloxacin (n. d. - 28), caffeine (33 - 132), propylparaben (0.96 - 5.6), methylparaben (3.7 - 7.9), benzylparaben (0.28 - 0.38), metoprolol (n. d. - 2.30), benzophenone-3 (3.6 - 4.6), acetophenone (n. d. - 27), octocrylene (6.7 - 8.8), fluoxetine (3.3 - 6.4), diazepam (n. d. - 0.26) miconazole (n. d. - 0.86), gemfibrozil (n. d. - 0.71), clenbuterol (0.56 - 0.71), atenolol (n. d. - 5.0).
Van <i>et al.</i> (2021)	Philippines	Caffeine (16.5–11500), Sulfamethoxazole (3.65-2778), Lincomycin (0.17-978), Carbamazepine (6.44-57.4)
Szymczycha <i>et al.</i> (2020)	Poland	caffeine (92.3), sulfamethoxazole (81.9 - 132.2), sulfapyridine (21.7)
Styszko <i>et al.</i> (2021)	Poland	Venlafaxine (8.5 - 170), Desvenlafaxine (13 - 590.5), Morphine (2.0 - 29), Codeine (5.0 - 81.5), Dihydrocodeine (1.0 - 3.5), Tramadol (50.0 - 468.5), O-desmethyltramadol (91.5 - 636), EDDP (1.0 - 3.0), Methadone (0.5 - 10.5), Cocaine (0.5 - 37.5), Benzoyllecgonine (1.5 - 33.5), MDMA (0.5 - 102), Creatinine (51.5 - 686), Nicotine (11.0 - 8187.0), Caffeine (84.0 - 29995.5), Cotinine (9.0 - 1365.0), 1,7-Dimethylxantine (271.5 - 90665.0), Ketamine (1.0 - 4.5), Norketamine (1.0 - 62.5), Temazepam (58.0 - 109.5), Oxazepam (238.0

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
		- 2344.0), Ibuprofen (55.7 - 3730.1), Ketoprofen (5.1 - 100.5), Naproxen (51.4 - 1091.9), Diclofenac (123.2 - 1352.6), Irbesartan (4.5 - 6558.8), Valsartan (222.7 - 2704.4), Bezafibrate (18.9 - 34.5), Atorvastatin (15.0 - 132.6), Tricosan (44.6 - 271.5), Sulfasalazine (14.1 - 31.2), Fexofenadine (25.1 - 391.4), 1-benzophenone (0.5 - 73.8), 2-benzophenone (1.3 - 5.4), 4-benzophenone (91.2 - 881.0), Methylparaben (10.3 - 616.9), Ethylparaben (0.8 - 349.0), Propylparaben (0.9 - 165.7), Butylparaben (2.1 - 23.6), Bisphenol A (16.3 - 514.9), E1 (22.7 - 39.1), E2 (5.1 - 16.5)
Paíga <i>et al.</i> (2016)	Portugal	Ciprofloxacin (88.7), sulfamethazine (123.0), sulfamethoxazole (43.0), clarithromycin (26.8), carbamazepine (214.0), 10,11-epoxycarbamazepine (44.4), fluoxetine (19.5), citalopram (28.9), venlafaxine (159.0), paroxetine (25.9), trazodone (27.6), acetaminophen (527.0), ibuprofen (1317.0), hydroxy ibuprofen (317.0), diclofenac (38.0), naproxen (260.0), salicylic acid (294.0), ketoprofen (75.3)
Fernandes <i>et al.</i> (2020)	Portugal	Azithromycin (221.0 - 2,819), carbamazepine (< LOQ - 354.0), ciprofloxacin (334.7 - 343.3), citalopram (< 0.5 - 67.9), clarithromycin (76.6 - 269.0), diazepam (< LOQ), fluoxetine (1.9 - 83.3), moxifloxacin (< LOQ), ofloxacin (106.0 - 134.0), sertraline (1.6 - 9.2), trimethoprim (105.7 - 114.3), venlafaxine (33.3 - 641.0)
Palma <i>et al.</i> (2020)	Portugal	Acetaminophen (5.2 - 699.6), atenolol (16.5 - 307.4), bezafibrate (0.5 - 1672.4), carbamazepine (6.9 - 3235.0), clarithromycin (4.0 - 306.3), codeine (6.0 - 131.9), diazepam (0.8 - 4.7), diclofenac (18.0 - 4806.0), fenofibrate (1.9 - 30.5), furosemide (5.5 - 6894.0), gemfibrozil (4.6 - 428.6), hydrochlorothiazide (49.9 - 2726.0), ibuprofen (72.1 - 3161.0), indomethacin (5.4 - 124.0), ketoprofen (12.9 - 321.4), lorazepam (27.1 - 140.7), metoprolol (1.6 - 333.2), naproxen (9.1 - 2868.0), ofloxacin (27.9 - 115.2), paroxetine (60.6 - 110.9), propranolol (46.7 - 188.0), propyphenazone (568.0), sotalol (3.4 - 656.8), sulfadiazine (18.5 - 75.24), sulfamethazine (3.6 - 156.2), sulfamethoxazole (1.7 - 204.3), trimethoprim (3.1 - 38.4)
Homem <i>et al.</i> (2022)	Portugal	limonene (5.5 - 141.7), linalool (12.4 - 271.2), citronellol (12.7 - 200.2), geraniol (13.6 - 290.9), methyleugenol (0.7 - 3.2), α-isomethyl ionone (1.2 - 78.7), lilial (2.5 - 25.3), hexylcinnamaldehyde (5.5 - 14.4), benzyl benzoate (5.7 - 26.7), benzyl salicylate (3.4 - 35.4), cashmeran (1.0 - 104.4), celestolide (0.2 - 2.4), phantolide (0.1), galaxolide (5.0 - 379.2), tonalide (1.0 - 60.6), musk ketone (4.2 - 78.2), 2-ethylhexyl salicylate (1.0 - 26.9), homosalate (1.1 - 43.3), benzophenone-3 (10.2 - 254.1), 4-methylbenzylidene camphor (5.9), 2-ethylhexylmethoxycinnamate (0.7 - 8.8), octocrylene (9.5 - 128.6)
Chiriac <i>et al.</i> (2021)	Romania	2,3,4-trihydroxybenzophenone (6.46 - 824), 4-hydroxybenzophenone (1.46 - 27.32), 2,4-dihydroxybenzophenone (5.22-600), 2,3,4-t.rihydroxybenzophenone (6.46 - 824), 2-hydroxy-4-methoxy-benzophenone (54.5 - 5702.5), 2-hydroxy-4-methoxy-4'-methylbenzophenone (0.17 - 6.95), Homosalate (23.8 - 1286.1), Ethylhexyl salicylate (53.1 - 1261.7), Benzyl salicylate (44.5 - 365), Bisphenol A (20.1 - 2901), Bisphenol E (6.63 - 99.9), Bisphenol F (3.1 - 19.7), Bisphenol S (0.43 - 9.78), 4-hydroxyacetophenone (0.52 - 6.63)
Pico <i>et al.</i> (2020)	Saudi Arabia	Acetaminophen (105.1 - 3069.1), alprazolam (265.3 - 389.4), atenolol (108.0 - 327.0), atorvastatin (225.1 - 474.7), bisphenol A (1990.1 - 484.9), butylparaben (35.5 - 65.2), caffeine (230.3 20663.5), clofibrate acid (0.01 - 1.5), codeine (0.01 - 22.5), diclofenac (32.9 - 1390.0), ethylparaben (0.02 - 6.2), etoricoxib (376.7 474.0), ibuprofen (157.3 - 2407.0), lorazepam (415.2 - 506.7), metformin (2.0 267.0), methylparaben (2.3 - 27.4), naproxen (0.02 - 142.9), ofloxacin (148.0 - 610.6), propylparaben (0.02 - 12.5), salicylic acid (10.5 - 129.2), tramadol (289.9 - 353.5), triclocarban (10.2 - 32.0), tricosan (5.0 - 33.5), trimethoprim (0.02 - 586.2)
Niemi <i>et al.</i> (2022)	Scotland	paracetamol (34 - 658), ibuprofen (1 - 697), diclofenac (6 - 324), clarithromycin (158), trimethoprim (43 - 505), carbamazepine (1 - 222)
Matongo <i>et al.</i> (2015)	South Africa	Caffeine (1100. - 33200.0), acetaminophen (999.0 - 1740.0), trimethoprim (n. d. - 290.0), sulfamethoxazole (1220.0 - 5320), erythromycin (60.0 - 2480.0), clozapine (2180.0 - 8890.0), carbamazepine (130.0 - 3240.0), sulfamethazine (1020.0 - 1090.0), ibuprofen (4700.0 - 84600.0)
Wood <i>et al.</i> (2015)	South Africa	Zalcitabine (8.4 - 71.3), Tenofovir (145 - 243), Lamivudine (94.5 - 242), Didanosine (54.0 - 54.1), Stavudine (102 - 778), Caffeine (40.7 - 927), Zidovudine (51.7 - 973), Nevirapine (130 - 1480), Lopinavir (130 - 305)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Agunbiade and Moodley (2016)	South Africa	Ampicillin (3211.0 - 5509.0), aspirin (13708.0 - 25345.0), bezafibrate (3.1 - 233.0), ciprofloxacin (2399.0 - 14331.0), diclofenac (600.0 - 8174.0), ibuprofen (445.0 - 689.0), ketoprofen (390.0 - 437.0), nalidixic acid (12484.0 - 23504.0)
Kim et al. (2017)	South Korea	Acetaminophen (14.4 - 48.0), atenolol (26.8 - 85.7), caffeine (55 - 1231), carbamazepine (3.9 - 38.6), ciprofloxacin (0.8 - 1.5), crotamiton (2.6 - 10.5), enrofloxacin (0.3 - 0.9), erythromycin (0.2 - 1.02), fenbendazole (0.5 - 11.6), fenbendazole-SO (2.8 - 12.8), fenbendazole (0.5 - 11.6), fenbendazole-SO (2.8 - 12.8), lincomycin (14.8 - 438), norfloxacin (0.5 - 3.04), ofloxacin (2.7 - 54.5), praziquantel (0.3 - 22.7), propranolol (5.2 - 11.9), sulfamethoxazole (2.1 - 2.2), sulfadiazine (0.2 - 5.7), sulfathiazole (1.5 - 126), spiramycin (5.7 - 7.2), thiabendazole (0.3 - 4.5), trimethoprim (0.9 - 13.3)
Mhuka et al. (2020)	South Korea	Amitriptyline (1.16 - 2.272), Bufexamac (3.188), Caffeine (4.098 - 7718), Carbamazepine (8.774 - 240.7), Ciprofloxacin (< 10730), Clarithromycin (0.982 - 10.44), Desipramine (< 27), Dexamethasone (<189), Diclofenac (5.642 - 81.98), Diethylstilbestrol (249.1 - 368.4), Efavirenz (116.7 - 514.6), Enalapril (1.53 - 2.891), Enrofloxacin (< 241), Erythromycin (6.59 - 9.71), Estradiol (134.7 - 931.1), Estriol (81.3 - 546.0), Estrone (7.124 - 63.04), Famciclovir (3.107 - 8.69), Fenoprofen (67.98 - 418.1), Fluconazole (10.67 - 200.8), Flumequine (0.932), Gabapentin (2.061 - 18.62), Gemfibrozil (8.505 - 545.2), Ibuprofen (1548 - 12812), Ifosfamide (1.15), Indomethacin (4.403 - 8.555), Isoniazid (3.638 - 5.873), Ketoprofen (8.853 - 9.307), Lamivudine (8.912 - 10.38), Lidocaine (1.292 - 112.4), Medroxyprogesterone (6.71 - 9.82), Mefenamic acid (2.239 - 91.15), Mestranol (19.55 - 81.59), Methylparaben (4.376 - 110.0), Metoprolol (0.11 - 0.22), Naproxen (30.33 - 486.9), Nevirapine (7.332 - 10.99), Norfloxacin (<176000), Ofloxacin (4.65 - 30.70), Paracetamol (323.0 - 1683), Paraxanthine (204.7 - 2907), Penciclovir (18.66 - 33.94), Phenacetin (2.17 - 2.75), Pindolol (37), Prednisolone (25.27 - 36.12), Procaine (1.55), Progesterone (2.20 - 3.59), Ractopamine (<35), Ritonavir (5 - 58.84), Salbutamol (0.94 - 1.33), Salicylamide (26.37 - 40.81), Sulfadimethoxine (0.86 - 1.83), Sulfadoxine (0.72), Sulfamethazine (1.77 - 4.89), Sulfamethoxazole (52.97 - 297.4), Sulfanilamide (ILOQ), Sulfapyridine (1.15), Terbutaline (<53), Testosterone (2.38), Thiabendazole (<27), Tonalide (3.54 - 7.45), Tramadol (6.056 - 40.38), Triclocarban (3.494 - 28.99), Triclosan (8.98 - 11.52), Trimethoprim (6.9011 - 171.3), Valsartan (54.01 - 322.1), Venlafaxine (0.972 - 5.14)
Dehm et al. (2021)	South Pacific	Donepezil (0.61 – 180), Memantine (0.72 – 23), Alfuzosin (0.10 – 110), Irbesartan (0.52 – 62), Telmisartan (1.1 – 120), Cilazapril (2.0 - 4.6), Finasteride (11 – 65), Flutamide (6.5), Flecainide (0.10 - 7.5), Trimethoprim (0.13 – 230), Ciprofloxacin (11 – 170), Sulfamethoxazol (5.5 – 760), Clarithromycine (2.4 - 6.3), Clindamycine (1.3 – 51), Biperiden (0.11 – 29), Orphenadrine (0.10 – 16), Clomipramine (0.54 – 480), Bupropion (0.10 - 1.8), Paroxetine (11 – 370), Amytriptyline (5.4 – 180), Mianserin (1.0 – 120), Sertraline (12 – 140), Duloxetine (1.0 - 2.4), Mirtazapine (12 – 43), Maprotiline (6.6 – 12), Citalopram (7.0 – 85), Venlafaxine (5.7 - 8.4), Repaglinide (0.52 – 89), Glibenclamide (18 – 45), Glimepiride (13 – 55), Loperamide (0.65 – 150), Carbamazepin (1.0 – 190), Clonazepam (5.1 – 17), Tamoxifen (5.3 – 140), Clotrimazol (1.0 – 95), Ketoconazole (10 – 620), Fluconazole (0.51 – 22), Miconazole (75), Hydroxyzine (0.58 – 37), Desloratadin (0.58 – 40), Diphenhydramine (0.05 - 2.8), Fexofenadine (5.2 – 77), Clemastine (0.74 – 49), Cyproheptadine (5.3 – 15), Promethazine (1 – 11), Meclozine (11), Codeine (0.50 – 130), Pizotifen (0.5 – 66), Paracetamol (10 – 630), Diclofenac (11 – 66), Fenofibrate (54), Risperidone (0.10 – 32), Haloperidol (0.11 – 34), Chlorpromazine (5.5 – 41), Flupentixol (5.3 – 370), Chlorprothixene (11 – 51), Levomepromazine (55), Oxazepam (1.0 – 11), Flunitrazepam (20 – 94), Alprazolam (10 – 29), Zolpidem (0.78 - 2.6), Sotalol (0.54 – 160), Bisoprolol (0.10 – 30), Atenolol (5.1 – 260), Metoprolol (5.3 – 260), Diltiazem (1.7), Budesonide (10 – 190), Bromocriptine (8.8 – 130), Atracurium (0.51 - 1.1), Naloxone (1.0 – 250), Atorvastatin (12 – 110), Rosuvastatin (13 – 29)
Carmona et al. (2014)	Spain	Bezafibrate, bisphenol A, butylparaben, clofibrate acid, chloramphenicol, diclofenac, ethylparaben, flufenamic acid, gemfibrozil, ibuprofen, indomethacin, methylparaben, naproxen, propylparaben, salicylic acid, THCCOOH, thiamphenicol, triclocarban, warfarin
Gorga et al. (2015)	Spain	Estradiol (0.6 - 7.8), estrone (1.2 - 7.3), estriol (3.0 - 5.7), ethinylestradiol (2.2), triclocarban (1.9 - 3.4), triclosan (1.7 - 19.0), methylparaben (1.4 - 142.0), ethylparaben (8.8 - 49.0), propylparaben (0.5 - 26.0), benzylparaben (0.6 - 7.3), bisphenol A (6.8 - 649.0), octylphenol (1.4 - 85.0), nonylphenol (42.0 - 391.0), caffeine (7.0 - 3227.0)
Ruhí et al. (2016)	Spain	Diclofenac (29.1), ibuprofen (192.6), 1-OH-Ibuprofen (68.7), bezafibrate (7.2), gemfibrozil (285.7), hydrochlorothiazide (311.1), carbamazepine (23.6), venlafaxine (13.8), sulfamethoxazole (23.2), TBEP (65.3)

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Carmona <i>et al.</i> (2017)	Spain	Bisfenol A (41.0), diclofenac (33.0), gemfibrozil (34.0), ibuprofen (153.0), methylparaben (24.0), naproxen (36.0), propylparaben (12.0), butylparaben (5.0), THC (32.0), warfarin (54.0), 4-epitetracycline (18.0), alprazolam (739.0), allopurinol (13.0), azithromycin (12.0), carbamazepine (29.0), ciprofloxacin (214.0), clarithromycin (15.0), chloramphenicol (68.0), etoricoxib (21.0), metformin (13.0), metoprolol (17.0), ofloxacin (61.0), acetaminophen (177.0), propranolol (15.0), salicylic acid (22.0), sulfamethoxazole (20.0), telmisartan (361.0), thiamphenicol (10.0), trimethoprim (73.0), tetracycline (10.0), vildagliptin (461.0)
Ccancapa-Cartagena <i>et al.</i> (2019)	Spain	Atorvastatin (19.1 - 349.5), caffeine (4.9 - 161.5), carbamazepine (121.3 - 1196.0), eprosartan (161.6 - 1967.0), ketoprofen (22.1 - 686.5), lidocaine (209.5 - 2407.0), trimethoprim (145.4 - 2569.5)
Sadutto <i>et al.</i> (2020)	Spain	Alprazolam, Bezafibrate, Bisphenol A, butylparaben, indomethacin, codeine, Atorvastatin, caffeine, clofibrat acid, chloramphenicol, diclofenac, etoricoxib, ethylparaben, flufenamic acid, furosemide, ibuprofen (452), lorazepam, metformin, methylparaben, naproxen, propylparaben, salicylic acid (971), thiamphenicol, tramadol, triclosan, warfarin
Sadutto <i>et al.</i> (2021)	Spain	alprazolam (2 - 10), atenolol (52 - 320), atorvastatin (1 - 21), bezafibrate (1 - 79), bisphenol A (12 - 20), butylparaben (40 - 71), caffeine (11 - 668), Chloramphenicol (39 - 50), clofibrat acid (75 - 80), codeine (7 - 154), diclofenac (30 - 169), enalapril (4 - 8), ethylparaben (65 - 82), Etoricoxib (1 - 25), Flufenamic Acid (1 - 195), Furosemide (48 - 115), ibuprofen (20 - 217), Indomethacin (24 - 56), Lorazepam (1 - 88), Metformin (2 - 375), Methylparaben (72 - 107), naproxen (86 - 225), paracetamol (5 - 168); propylparaben (35 - 13), salicylic acid (75 - 858), Thiamphenicol (1 - 35), tramadol (1 - 695), triclocarban (1 - 15), triclosan (15 - 72), warfarin (45 - 70)
Solaun <i>et al.</i> (2021)	Spain	Diclofenac (103), 17β-estradiol (1.15), 17α-ethinylestradiol (<1), Estrone (0.242), 2,6-ditert-butyl-4-methylphenol (2370), 2-ethylhexyl 4-Methoxycinnamate (1520), Erythromycin (32.7), Clarithromycin (176), Azithromycin (0.5 - 649), Ciprofloxacin (1.67 - 236), Methiocarb (<16.5), Imidacloprid (46.9), Thiacloprid (2.4), Thiamethoxam (1.6), Clothianidin (<5), Acetamiprid (9.1), Oxadiazon (3.1), Triallate (11.1), Metaflumizone (<3.3)
Guruge <i>et al.</i> (2019)	Sri Lankan	Diclofenac (< 0.4 - 14.3), indomethacin (< 0.5 - 3.2), mefenamic acid (< 0.2 - 95.0), ibuprofen (< 1.1 - 84.0), fenofibrat acid (< 0.3 - 14.5), gemfibrozil (< 0.05 - 25.6), atorvastatin (< 0.3 - 1.0), diltiazem (< 0.1 - 1.2), propranolol (< 0.4 - 2.6), losartan (< 0.2 - 93.0), chlorpheniramine (< 0.7 - 12.2), cetirizine (< 0.3 - 46.0), warfarin (< 0.1 - 1.2), carbamazepine (< 0.1 - 71.2), phenytoin (< 0.2 - 79.0), tramadol (< 0.1 - 40.8), lorazepam (< 0.1 - 1.3), diazepam (< 0.1 - 1.4), sulfapyridine (< 0.1 - 11.2), sulfamethoxazole (< 0.1 - 0.7), trimethoprim (0.1 - 4.2), erythromycin (< 0.3 - 21.6), clarithromycin (< 0.1 - 119.0), chloramphenicol (< 0.1 - 7.3), ciprofloxacin (< 0.4 - 36.2), triclocarban (< 0.4 - 41.0), triclosan (< 2.2 - 2.9), methylparaben (< 1.9 - 9.6), ethylparaben (< 0.5 - 5.6), DEET (< 2.2 - 202.0)
Golovko <i>et al.</i> (2020)	Sweden	Carbamazepine (2.8 - 21), DEET (0.58 - 3.3), Tolytriazole (10 - 42), Bicalutamide (1.4 - 7.2), Caffeine (5.9 - 12), Lamotrigine (4.8 - 97), Metoprolol (1.1 - 9.9), Fexofenadine (1.6 - 3.6), Tramadol (1 - 18), Citalopram (0.16 - 1.2), Oxazepam (1.9 - 5), Lidocaine (1.9 - 14), TBEP (0.9 - 8.3), Cetirizine (0.12 - 8.4), Propranolol (< 0.021 - 0.46), Atenolol (1 - 1.9), Methylparaben (0.48 - 0.85), Bisoprolol (0.47 - 0.62), Venlafaxine (5.1 - 5.6), Sulisobenzene (0.76 - 5.9), Diazepam (0.048 - 0.089), Mirtazapine (0.59 - 0.69), Pyrimethamine (0.026 - 0.038), Propylparaben (0.092 - 0.19), DMDEE (0.29 - 0.33), Diclofenac (3.2 - 3.6), Furosemide (2.6 - 6.5), Irbesartan (0.34 - 0.37), Losartan (4.5 - 4.9), Clozapine (< 0.025 - 0.045)
Malnes <i>et al.</i> (2022)	Sweden	Desvenlafaxine (11 - 150), Fexofenadine (7.8 - 200), Carbamazepine (5 - 91), Caffeine (4.3 - 880), Nicotine (3.6 - 36), DEET (1.2 - 32), Metoprolol (22 - 400), Lidocaine (3.9 - 67), Cetirizine (2.9 - 63), Metformin (2.6 - 120), Lamotrigine (19 - 230), Fluconazole (2.7 - 37) Hydrochlorothiazide (15 - 400) Tramadol (14 - 290), Tolytriazole (15 - 750) Losartan (27 - 460), Oxazepam (5.9 - 67) Diclofenac (18 - 200), Atenolol (7.1 - 120), Sulisobenzene (27 - 420), Citalopram (1.8 - 45), Clindamycin (1.6 - 17), Venlafaxine (23 - 260), Methylparaben (5.2 - 19), Trimethoprim (1.9 - 120), Propranolol (1.6 - 41), Mirtazapine (1.5 - 30), Propylparaben (1.5 - 5.7), Valsartan (5.4 - 78), Irbesartan (2.9 - 60), Salicylic acid (1.4 - 7.3), Codeine (3.5 - 180) Bisoprolol (3.4 - 37), Acetaminophen (27 - 340), Sulfamethoxazole (5.6 - 50), Oxycodone (0.77 - 16), Climbazole (0.36 - 65), Memantine (1.5 - 8.4), Sotalol (5 - 110), Bezafibrate (1.9 - 18), Panthenol (0.93 - 6.1), Clozapine (1.7 - 44), Clarithromycin (1.3 - 130), Mefenamic acid (2.2 - 13), Atorvastatin (0.65 - 12), Primidone (8.5 - 230), Ricinoleic acid (6 - 24), Amitriptyline (3.9 - 54), Diltiazem (0.64 - 40), Norsertraline (38 - 130), Metronidazole (2

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
		- 16), Chlorzoxazone (1.1 - 100), Omeprazole (0.36 - 2.1), Furosemide (28 - 160), Erythromycin (1.4 - 20), Benzophenone-3 (0.74 - 2.6), Ifosfamide (0.4 - 2.9), Thiabendazole (0.26 - 0.62), Daidzein (4.4 - 16), Chloramphenicol (2.3 - 260), Ramipril (0.27 - 3.5), Sertraline (4 - 20), Diazepam (0.26 - 140), Azithromycin (0.82 - 8.3), Paroxetine (0.42 - 210), Loperamide (0.28 - 0.72), Salbutamol (1.9 - 8.8), Simvastatin (2.1 - 11), Carazolol (1.3 - 3.4), Terbutaline (0.18 - 0.39), Meclofenamic acid (31), Ethylparaben (17)
Korkmaz et al. (2022)	Turkey	Diclofenac (<28 - 1300), fenoprofen (<18 - 1320), ketoprofen (<33 - 370), naproxen (<21 - 340), ibuprofen (<15 - 2130), carbamazepine (<38 - 1840), gemfibrozil (<16 - 9710), clorfibrac acid (<53 - 2090), estrone (<48 - 2090), 17 $\beta$ -Estradiol (<16 - 3890), 17 $\alpha$ -Ethyneestradiol (<10 - 3550)
Dalahmeh et al. (2020)	Uganda	Atenolol (40 - 151), carbamazepine (106 -155), cetirizine (16), codeine (31), diclofenac (123 - 153), furosemide (137 - 337), gemfibrozil (491), hydrochlorothiazide (139), lidocaine (15 - 48), losartan (95 - 111), pyrimethamine (4 - 22), salbutamol (8.1 - 20.9), sulfamethoxazole (2460 - 2500), trimethoprim (4630), Venlafaxine (41.5)
Nantaba et al. (2020)	Uganda	Trimethoprim (1.1 - 89), Sulfamethoxazole (0.8 - 5600), Sulfamethazine (2.4 - 50), Sulfacetamide (0.8 - 13), Oxytetracycline (17 - 300), Tetracycline (2.7 - 70), Erythromycin (10 - 66), Azithromycin (14 - 60), Ciprofloxacin (2.0 - 41), Levofloxacin (1.8 - 29), Norfloxacin (1.9 - 26), Enoxacin (5.9 - 51), Ibuprofen (5.9 -780), Diclofenac (1.8 - 160), Acetaminophen (1.6 - 27), Carbamazepine (4.8 - 72), Atenolol (24 - 380), Metoprolol (0.4 - 21)
Griffero et al. (2019)	Uruguay	Acetaminophen (22 - 450), ibuprofen (3.2 - 18), ketoprofen (20 - 98), fenoprofen (0.27 - 0.52), diclofenac (0.6 - 2.8 ), antipyrine (0.37 - 7.8), propyphenazone (0.6 - 0.7), indomethacin (n. d. - 0.3), mefenamic acid (9.7 - 34), naproxen (3.3 - 20), sulfamethoxazole (0.90 - 1.2), sulfamethazine (n. d. - 3.4), oxytetracycline (n. d. - 29), ofloxacin (15 - 20), ciprofloxacin (26 - 31), norfloxacin (n. d. - 28), caffeine (33 - 132), propylparaben (0.96 - 5.6), methylparaben (3.7 - 7.9), benzylparaben (0.28 - 0.38), metoprolol (n. d. - 2.30), benzophenone-3 (3.6 - 4.6), acetophenone (n. d. - 27), octocrylene (6.7 - 8.8), fluoxetine (3.3 - 6.4), diazepam (n. d. - 0.26) miconazole (n. d. - 0.86), gemfibrozil (n. d. - 0.71), clenbuterol (0.56 - 0.71), atenolol (n. d. - 5.0).
Fairbairn et al. (2015)	USA	Acetaminophen (0.99 - 7.0), acetochlor (1.2 - 180.0), atrazine (1.8- 390.0), caffeine (0.84 - 250.0), carbamazepine (0.3 - 150.0), daidzein (0.54 - 3.1), DEET (7.2 - 110.0), genistein (14.0 - 69.0), metolachlor (1.2 - 100.0), sulfamethoxazole (n. d. - 8.5)
Panthi et al. (2019)	USA	azithromycin (0.4 - 1932.8), caffeine (6.1 - 67716.9), ciprofloxacin (0.4 - 1535.6), erythromycin (n. d.), A(n. d.), linezoid (0.3 - 193.4), oxacillin (0.8 - 99.7), Oxolinic acid (0.6 - 771.6), penicillin G (5.0 - 23.3), pipemidic Acid (0.4 - 82.7), sulfamethoxazole (0.5 - 2061.0), triclocarban (14.5 - 3490.6), tetracycline (3.1 - 107.5), trifluralin (2.6 - 107.5), vancomycin (0.3 - 1760.2)
Deere et al. (2020)	USA	1,7-Dimethylxanthine (976), 10-hydroxy-amitriptyline (1090), 17 alpha-Estradiol (69.6), 17 alpha-Ethynodiol (53.7), 17 beta-Estradiol (87.8), 2-Hydroxy-ibuprofen (12,400), Acetaminophen (715), Albuterol(28.8), Alprazolam (39.9), Amitriptyline (1740), Amlodipine (707), Amphetamine (565), Androstenedione (1700), Atenolol (1300), Atorvastatin (544), Azithromycin (4800), Benzoyllecgonine (60.6), Bisphenol A (41,200), Caffeine (12,200), Carbamazepine (2300), Cimetidine (85.7), Citalopram (8010), Clarithromycin (249), Clotrimazole (17.9), Cocaine (259), Codeine (503), Cotinine (924),DEET (238,000), Dehydronifedipine (6), Desmethyldiltiazem (642), Diazepam (37.9), Diltiazem (829), Diphenhydramine (4110), Drosiprenone (504), Enalapril (29), Enrofloxacin (7.3), Equilenin(56.6), Erythromycin-H2O (1880), Estrone (726), Fluoxetine (2080), Furosemide (7270), Gemfibrozil (8970), Glipizide(194), Glyburide (20.5), Hydrochlorothiazide (4870), Hydrocodone (449), Ibuprofen (36,000), Meprobamate (548), Mestranol (118), Metformin (429), Metoprolol (13,100), Naproxen (60,100), Norfluoxetine (700), Norverapamil (171), Ofloxacin (106), Oxazepam (233), Paroxetine (688), Promethazine (37.8), Propoxyphene (9.4), Propranolol (5990), Ranitidine (310), Rosuvastatin (2940), Sertraline (4210), Sulfadiazine (10.7), Sulfamethizole (4.2), Sulfamethoxazole (1770), Tamoxifen (2.7), Testosterone (204), Theophylline (1030), Thiabendazole (149), Triclocarban (313), Tricosan (1830), Trimethoprim (8510), Venlafaxine (17,000), Verapamil (1800), Warfarin (21.8),

Reference	Country	Detected compounds (concentration detected, ng L <sup>-1</sup> )
Sharma and Hanigan (2021)	USA	Caffeine (1.19 - 49.63), Carbamazepine (1.02 - 122.52), DEET (8.81 - 150.28), DPH (0.25 - 2.80), Fluoxetine (0.60 - 14.18), Meprobamate (1.60 - 182.85), Primidone (18.2 - 3932.2), Sulfamethoxazole (2.51 - 323.39), Trimethoprim (0.1 - 2212.47)
Brunelle et al. (2022)	USA	acetyl-sulfamethoxazole (3.9 - 4.0), bupropion (0.6 - 2.2), caffeine (50.8 - 106), carbamazepine (1.0 - 4.8), citalopram (1.5 - 3.8), desvenlafaxine (3.5 - 11.8), iopamidol (37.7 - 96.1), lamotrigine (23.0 - 38.1), sertraline (0.6 - 0.7), trimethoprim (3.4), venlafaxine (1.8 - 5.2)
Kullberg et al. (2022)	USA	Amphetamine (2 - 236), Caffeine (2 - 21), 1,7-Dimethylxanthine (2 - 23), Acetaminophen (8), Sulfachloropyridazine (7), Cotinine (2)
Ngo et al. (2021)	Vietnam	Lincomycin (0.30 – 24.9), Sulfamethoxazole (6.3 – 66.6), Griseofulvin (2.2 – 2.9), Trimethoprim (3 – 6.1), 2-Quinoxalinecarboxylic acid (0.8 – 6), Sulfamonomethoxine (2.4 – 6.2), Sulfadimethoxine (1.5 – 4.3), Tiamulin (0.004 – 0.9), Roxithromycin (0.31 – 0.36), Sulfamerazine (0.38 – 0.47), Tylosin (0.19 - 0.75), Sulfadimidine(39.2), Tetracycline (0.29), Ciprofloxacin (0.78), Erythromycin (0.16), Diclofenac (1.1 – 1.4), Mefenamic acid (0.5 – 1.1), Acetaminophen (11.4 – 34.4), Antipyrine (0.8 – 1.03), Isopropylantipyrine *0.18, Indometacin (0.31), Crotamiton (0.5 – 14.7), Metoprolol (0.4 – 0.41), Propranolol (0.3 – 0.31), Atenolol (0.57), Primidone (1.2 – 2.95), Carbamazepine (0.3 – 2.62), Bezafibrate (0.4), Cyclophosphamide (0.92), Dipyridamole (<LOQ – 0.25), Theophylline (2.2 – 8.8), Caffeine (46.34 – 444), Sulpiride(0.08 – 0.8), Pirenzepine (0.3 – 0.4), DEET (9.7 – 11.4),

Table S2. PPCPs (name and concentration - ng g<sup>-1</sup>) detected in sediment samples from different countries reported in papers published from 2014 to 2022

Reference	Country	Detected compounds (concentration detected, ng g <sup>-1</sup> )
Beretta et al. (2014)	Brazil	Caffeine (0.3 - 23.4), carbamazepine (0.1 - 4.8), ibuprofen (0.8 - 18.8), diclofenac (0.3 - 1.1), galaxolide (3.0 - 52.5), tonalide (3.1 - 27.9), atenolol (0.5 - 9.8), diazepam (0.4 - 0.7), erythromycin (0.1 - 2.3)
Sousa et al. (2015)	Brazil	Triclosan (3.53 - 176), atenolol (8.98–13.8), caffeine (2.22–41.0) and propranolol (3.73–28.5)
Mizukawa et al. (2017)	Brazil	BP3 (6 - 51), BP1 (13 - 62), 4HB (26.4), 4MBC (38 - 49), EHMC (5 - 167), EtPABA (43 - 152), OC (10 - 322), BZT (14 - 630)
Santos et al. (2018)	Brazil	17- $\alpha$ ethynodiol ( $< 5.0 - 15.9 / > 1.0$ ), 4-nonylphenol (10.4 - 72.5 / $> 1.0$ ), 4-t-octylphenol ( $< 25.0 - 49.2 / < 0.1$ ), bisphenol A ( $< 5.0 - 7.1 / > 1.0$ ), estrone ( $< 5.0 - 7.6 / 0.1 < RQ < 1$ ), methyl triclosan (2.2 - 4.8 / n. a.), triclosan (1.1 - 5.3 / 0.1 < RQ < 1),

Chaves et al. (2020)	Brazil	Albendazole (< 1 - 13), avobenzone (< 13 - 51), benzophenone-3 (< 3 - 15), caffeine (6 - 20), ketoconazole (< 5 - 277), mebendazole (< 5 - 14), nifedipine (1 - 75), nimesulide (< 3), propranolol (2), triclosan (< 50 - 137), triclocarban (< 1 - 1318)
Comtois-Marotte et al. (2017)	Canada	caffeine (27205 / 208 / < 1.1), bisfenol-A (593.0 / 60.0 / 15.0), cholesterol (3168.0 / 85.0 / 193.0), coprostan-3-ol (3684.0 / 29.0 / 15.0)
Krogh et al. (2017)	Canada	warfarin (45.0), caffeine (110.0), acetaminophen (55.7), dehydronifedipin (6.0), azithromycin (1.0), carbamazepine (50.0), ciprofloxacin (16.0)
Peng et al. (2017)	China	4-nonylphenol (10.9 - 14400.0), 4-tert-octylphenol (31.3 - 261.0), bisphenol A (2.5 - 433.0), triclocarban (1.8 - 3440.0), triclosan (0.8 - 689.0), galaxolide (190.0 - 1480.0), tonalide (30.7 - 235.0), musk xylene (8.8 - 376.0), clofibric acid (0.2 - 0.8), naproxen (0.4), diclofenac (0.4 - 10.6), indomethacin (3.0), ibuprofen (0.4 - 3.2)
Xie et al. (2017)	China	Erythromycin (2.8), ofloxacin (17.0), norfloxacin (13.0), ciprofloxacin (11.0), tetracycline (79.4), sulfamethoxazole (26.5), sulfamerazine (1.1), sulfadiazine (4.3). ibuprofen (10.5), diclofenac (3.7), naproxen (2.8), sertraline (3.3), clofibric acid 4.3), roxithromycin (15.4), carbamazepine (6.5), propranolol (7.5), 17b-estradiol(3.3), 17a-ethynodiol (7.0)
Li et al. (2018)	China	Sulfadiazine (5.2 - 87.0), sulfapyridine (1.1 - 126.0), sulfathiazole (37.0 - 149), trimethoprim (0.3 - 210.0), sulfamerazine (0.8 - 198.0 ), sulfamethazine (0.9 - 248.0), sulfamethoxazole (0.4 - 219.0), tetracycline (5.8 - 206.0), oxytetracycline (0.3 - 196.0), isochlortetracycline (2.2 - 23.2), ciprofloxacin (0.1 - 197.0), norfloxacin (3.4 - 1120.0), flumequine (21.5 - 97.5), spectinomycin (2.5 - 340.0), streptomycin sulfate (42.4 - 204.0), erythromycin (0.3 - 62.4), anhydroerythromycin (1.5 - 385.0), clarithromycin (6.8 - 25.8), roxithromycin (45.2 - 141.0), amoxicillin (1.3 - 6.0), ampicillin (2.9 - 3.9), cephalexin (1.8 - 3.3), cefotaxime sodium salt (2.2 - 18.5), penicillin-G (197.0), thiampenicol (0.2 - 216.0), chloramphenicol (17.6 - 58.1)
Zhang et al. (2018)	China	Sulfamethazine (0.3), sulfamethoxazole (1.6 - 25.0), trimethoprim (0.1 - 2.8), norfloxacin (1.8 - 52.5), ciprofloxacin (0.4 - 4.3), enrofluxacin (0.3 - 25.4), ofloxacin (0.5 - 1.6), clarithromycin (0.02 - 0.2), erythromycin (0.4 - 0.5), chloramphenicol (< 0.75), azithromycin (0.2 - 1.3)
Yao et al. (2018)	China	DEET (1.0 - 2.8), methylparaben (3.1 - 40.3), ethylparaben (0.1 - 0.3), propylparaben (0.1 - 1.1), triclocarban ( 0.2 - 667.0), triclosan ( 0.2 - 45.5).
Chen et al. (2018)	China	Ciprofloxacin (2.0 - 230.0), enrofloxacin (6.8 - 44.0), erythromycin (< 0.3), norfloxacin (2.3 - 36.0), ofloxacin (1.6 - 2.0), sulfamethazine (< 0.1 - 0.5), trimethoprim (0.1 - 2.5)
Hanna et al. (2018)	China	Ciprofloxacin (0.2 - 22), enrofloxacin (0.2 - 24), Levofloxacin (0.8 - 3), Norfloxacin (0.1 - 2.2), chloramphenicol (1 - 1.5)
He et al. (2018)	China	Ciprofloxacin (3.3 - 10.4), enrofloxacin, (1 - 8.4), amoxicillin (25.1 - 63.8), erythromycin (1.4 - 10), ofloxacin (9.6 - 15.1), florfenicol (1.7 - 8.9), ibuprofen (1.7 - 8.9), lincomycin (7.8 - 20.6), acetaminophen (25.2 - 95), diclofenac (0.6 - 2.7), caffeine (5 - 17.3),estrone (16.7 - 63.7), estradiol (53.8 - 246.8), estriol (27.3 - 109.7), triclosan (458.1 - 745.9), methylparaben (0.5 - 21), methyltriclosan (13.2 - 40.4)
Xie et al. (2019)	China	Trimethoprim (0.2), norfloxacin (2.2), ofloxacin (0.4), erythromycin (0.04), ibuprofen (0.002), ketoprofen (11.0), diclofenac acid 0.005), diphenhydramine (0.3), triclosan (0.02), triclocarban (1.4), bisphenol A (1.7),
Cao et al. (2020)	China	Clofibric acid (0.1 - 1.0), diclofenac (0.4 - 108.6), ibuprofen (< 0.2 - 17.4), ketoprofen (2.67 - 24.3), naproxen (2.1 - 22.7), sulfadimethoxine (0.001 - 0.06), sulfamethazine (0.1 - 12.5), sulfamethoxazole (0.3 - 6.9), triclosan (< 2.0 - 20.1), triclocarban (0.06 - 9.1)
Yang et al. (2020)	China	Roxithromycin (0.2 - 0.4), sulfamethoxazole (0.02 - 0.1), ibuprofen (0.1), caffeine (0.2 - 0.7), citalopram (0.02), sertraline (0.6), ketoconazole (0.2 - 0.3), clozapine (0.05), carbamazepine (0.2 - 0.2), EHMC (8.9 - 22.0), OD-PABA (0.4 - 1.7), homosalate (0.1 - 0.5), benzophenone-4 (0.07 - 0.4), benzophenone-3 (1.9 - 4.1), 2-Ethylhexyl salicylate (1.9 - 4.1), octocrylene (2.1 - 2.3), 4MBC (1.5 - 2.6), avobenzone (0.4 - 0.6)

Chen et al. (2021)	China	Ribavirin (0.1 - 10.4), Sulfadimidine (0.11 - 0.22), Sulfamethoxazole (0.11 - 0.19), Sulfamonomethoxine (0.22 - 0.39), Sulfachloropyridazine (0.09 - 0.10), Sulfaquinoxaline (0.09), Sulfamethizole (0.01 - 0.13), Sulfisoxazole (0.28 - 0.35), Norfloxacin (0.62 - 25.2), Ofloxacin (0.04 – 125), Moxifloxacin hydrochloride (0.53 - 2.80), Enoxacin (0.11 - 8.48), Enrofloxacin (0.02 - 7.70), Ciprofloxacin (0.11 - 0.78), Erythromycin (0.10 - 8.51), Azithromycin (0.43 - 41.1), Clarithromycin (2.10), Tilmicosin (0.12 - 14.5), Spiramycin (0.95 - 1.05), Triamcinolone acetonide (1.13 - 2.24), Hydrocortisone (0.01 - 0.02), Fluoromethalone (0.10 - 0.11), Prednisone 21-acetate (0.01 - 0.88), Hydrocortisone 21-acetate (0.02 - 0.03), Prednisolone (0.08)
Li et al. (2021)	China	Sulfadiazine (0.01 - 0.25), sulfamethoxazole (0.05 - 11.30), ciprofloxacin (2.35 - 15.36), ofloxacin (0.9 - 18.27), oxytetracycline (0.26 - 8.73), roxithromycin (0.15 - 3.96), naproxen (0.01 - 0.06)
Sun et al. (2021)	China	Et-PABA, benzophenone-3, 4MBC, EHMC, BM-DBM, octocrylene, benzophenone-1, benzophenone-4, acetaminophen, caffeine, sulfamethoxazole, diphenhydramine, trimethoprim, indometacin, erythromycin (74.74), ibuprofen, clofibric acid, naproxen, chloramphenicol,
Xie et al. (2022)	China	Bezafibrate (0.016), Carbamazepine (2.1), Clarithromycin (0.109), Diclofenac (5.0895), Erythromycin (0.06), Indomethacin (0.0905), Lincomycin (0.0385), Sulfadiazine (0.0045-0.0065), sulfamethazine (0.0445), Sulfamethoxazole (8.491), Trimethoprim (0.087)
Xu et al. (2022)	China	sulfamethoxazole, naproxen, diclofenac acid, ibuprofen (105.0), ketoprofen (142.9), flumequine, ciprofloxacin, norfloxacin, ofloxacin, clarithromycin, roxithromycin, erythromycin, oxytetracycline, isochlortetracycline, tetracycline, penicillin G, chloramphenicol, thiamphenicol, triclocarban, triclosan, spectinomycin, gemfibrozil, diphenhydramine, bisphenol A (194.0).
Koba et al. (2018)	Czech Republic	Diclofenac (< 3.2 - 30.0), metoprolol (37.0 - 170.0), clarithromycin (< 4.4 - 240.0), carbamazepine (7.1 - 16.0), citalopram (18.0 - 270.0), sertraline (6.0 - 77.0), venlafaxine (14.0 - 110.0)
Huber et al. (2016)	Faroe Islands, Iceland and Greenland	Acetaminophen (< 5.0), salicylic acid (7.7 - 222.0), diclofenac (0.2 - 1.0), ibuprofen (< 0.1 - 2.6), naproxen (< 0.1 - 0.85), lidocaine (< 0.25 - 2.3), metformin (< 0.5 - 56.7), metoprolol (< 0.1 - 62.8), atenolol (< 5.0 - 58.6), furosemide (< 0.2 - 2.75), amiloride (< 0.1 - 21.7), dipyridamole (1.9 - 14.2), citalopram (0.14 - 44.2), venlafaxine (< 0.1 - 736.0)
Díaz-Cruz et al. (2019)	Greece	Benzophenone-1 (30.5 - 185.1/ n. d.), benzophenone-3 (< LOQ), benzophenone-8 (< LOQ ), 4MBC (408.8 - 1400.4), octocrylene (0.1 - 0.7)
Nannou et al. (2019)	Greece	Risperidone (25.7), Venlafaxine (4.9), Citalopram (10.9), Carbamazepine (2.5 - 14.7)
Chakraborty et al. (2019)	India	Butylparaben (4 - 24), benzyl butyl phthalate (1.8 - 2), bis (2-ethylhexyl) phthalate (15 - 300), di-n-octyl phthalate (0.1 - 0.4 ), bis (2-ethylhexyl) adipate (9 - 96), bisphenol (2 - 199), carbamazepine (3 - 519), diclofenac (1 - 96), dimethyl phthalate (1 - 5), diethyl phthalate (1 - 6), dibutyl phthalate (1 - 55 ), ethylparaben (32 - 347), ibuprofen (1 - 132), methylparaben (14 - 423), musk ketone (2 - 26), naproxen (1 - 96), propylparaben (0.4 - 7), triclosan (2 - 84)
Mandaric et al. (2017)	Italy	Acetaminophen (0.6 - 1.8), ibuprofen (2.0), metoprolol (1.4 - 57.7 / 0.2), hydrochlorothiazide (5.8 - 189.5 / 0.3 - 0.5), trimethoprim (0.9 - 196.0 / 0.1 - 18.8), clarithromycin (9.1 - 159.0 / 0.7 - 58.1), Et-PABA (6.3 - 88.6 / 0.2 - 1.4)
Feo et al. (2020)	Italy	Clarithromycin (1.4 - 9), Lincomycin (0.04), atenolol (0.1 - 2.9), Enalapril (0.2), Irbesartan (0.03 - 2), Valsartan (0.2 - 8.6), Losartan (0.03 - 1.2), Hydrochlorothiazide (0.7), acetaminophen (5.1), Diclofenac (1.1), Ketoprofen (5.4 - 8.8), Naproxene (0.3), Carbamazepine (0.02 - 1.9), Dihydrocarbamazepine (0.1 - 0.4), Paroxetine (0.4 - 1.2), estrone (4), Ranitidine (0.2 - 0.9)
Mascolo et al. (2019)	Italy	Amisulpride (0.25 - 0.8), Benzotriazole (0.75 - 3), Clarithromycin (0.14 - 0.23), Climbazole (0.27 - 0.55), DEET (5.6 - 83), Flecainide (0.27 - 2.6), Irbesartan (0.01 - 0.29) Triphenylphosphate (1.4 - 8.8)
Kairigo et al. (2020)	Kenya	Amoxicillin (< 22 - 43800), ciprofloxacin (< 10 - 47400), doxycycline (< 135 - 32200), norfloxacin (< 8 - 26600), sulfamethoxazole (< 18 - 44700), trimethoprim (< 7 - 13300)

Díaz and Peña-Alvarez (2017)	Mexico	Ibuprofen (<0.1 - 100.3), naproxen (2.7 - 246) and triclosan (1 - 31.4)
Bernot et al. (2019)	New Zealand	Cotinine (8.0 - 20.0), DEET (7.9 - 58)
Ashfaq et al. (2019)	Pakistan	Acetaminophen (n. d. - 20), ibuprofen (n. d. - 1.6), ketoprofen (BLD - 16), fenoprofen (n. d. - 5.3), diclofenac (n. d. - 35.0), antipyrine (23 - 35), propyphenazone (n. d. - 5.2), indomethacin (n. d. - 3.9), mefenamic acid (5.5 - 8.8), sulfamethoxazole (2.5 - 8.9), sulfamethazine (n. d. - 3.1), oxytetracycline (n. d. - 6.8), ofloxacin (n. d. - 4.5), ciprofloxacin (4.6 - 13), caffeine (n. d. - 9.0), propylparaben (n. d. - 5.8), methylparaben (n. d. - 7.4), benzylparaben (n. d. - 3.8), benzophenone-3 (9.3 - 44), acetophenone (2.4 - 7.1), octocrylene (3.2 - 21), carbamazepine (n. d. - 4.2), miconazole (4.2 - 5.8), clenbuterol (n. d. - 4.6), atenolol (n. d. - 8.1).
Fernandes et al. (2020)	Portugal	Azithromycin (36.0 - 50.4), carbamazepine (< LOQ), citalopram (0.3 - 4.4), fluoxetine (< LOQ - 2.5), sertraline (1.6 - 6.4), venlafaxine (0.2 - 5.7)
Pico et al. (2020)	Saudi Arabia	Acetaminophen (11.5 - 25.0), alprazolam (56.4 - 87.0), atenolol (5.9 - 13.5), atorvastatin (14.0 - 84.5), bisphenol A (3.9 - 90.8), butylparaben (2.0 - 11.5), caffeine (7.1 - 75.9), diclofenac (0.6 - 31.7), ethylparaben (0.2), etoricoxib (0.7 - 63.9), ibuprofen (2.4 - 59.6), lorazepam (100.58 - 126.5), metformin (0.1 - 0.7), ofloxacin (1.7 - 17.2), salicylic acid (6.2 - 76.1), simvastatin (38.4 - 589.3), tramadol (0.2 - 107.1), triclocarban (0.2 - 10.4), triclosan (1.2 - 7.3)
Matongo et al. (2015)	South Africa	Caffeine (n. d. - 1.3), acetaminophen (6.3 - 15.8), trimethoprim (n. d. - 87.5), clozapine (n. d. - 17.9), carbamazepine (1.0 - 6.1), metronidazole (< 289.0 - 1253.5), ibuprofen (5.3 - 659.0)
Agunbiade and Moodley (2016)	South Africa	Ampicillin (50.8 - 369.0), aspirin (212.0 - 427.0), bezafibrate (1.4 - 80.3), ciprofloxacin (13.6 - 183.0), diclofenac (57.2 - 309.0), ibuprofen (4.7 - 11.2), ketoprofen (6.7 - 57.4), nalidixic acid (117.0 - 455.0)
Kim et al. (2017)	South Korea	Albendazole (11.9 - 14.8), caffeine (17.2 - 46.9), carbamazepine (34.5), crotamiton (38.8 - 78.1), erythromycin (15.0 - 48.1), fenbendazole (1.6 - 46.2), fenbendazole-SO (1.3 - 6.5), fenbendazole (1.6 - 46.2), fenbendazole-SO (1.3 - 6.5), flubendazole (0.8 - 130.0), praziquantel (1.5 - 8.4), propranolol (36.2), sulfamethoxazole (0.3), sulfadiazine (1.1 - 3.1), sulfathiazole (4.2 - 8.4), thiabendazole (20.7 - 697.0), trimethoprim (10.3 - 10.6)
Carmona et al. (2014)	Spain	bisphenol A (7.0), butylparaben (30), chlorfibrinic acid (10.0), chloramphenicol (6.0), diclofenac (15.0), ethylparaben (23.0), flufenamic acid (7.0), gemfibrozil (6.0), ibuprofen (30.0), indomethacin (4.0), methylparaben (152.0), naproxen (13.0), propylparaben (9.0), salicylic acid (318.0), THC (42.0), THCCOOH (5.0), thiamphenicol 5.0, triclosan (6.0), warfarin (9.0)
Gorga et al. (2015)	Spain	Estradiol (0.3 - 1.6), estrone (0.8 - 3.5), estriol (0.7 - 1.5), ethinylestradiol (1.4 - 2.1), triclocarban (1.1 - 29.0), triclosan (11.0 - 388.0), methylparaben (1.8 - 435.0), ethylparaben (0.9 - 2.3), propylparaben (0.6 - 8.8), benzylparaben (0.058 - 0.13), bisphenol A (19.0 - 117.0), octylphenol (9.0 - 76.0), nonylphenol (6.1 - 1693.0), caffeine (0.9 - 344.0)
Biel-Maeso et al. (2017)	Spain	Diclofenac (4.96 - 11.02), ibuprofen (5.8 - 24.9), indomethacin (4.0 - 9.0), mefenamic acid (1.6 - 3.3), gemfibrozil (0.10 - 0.4), caffeine (1.2 - 7.36), carbamazepine (0.1 - 0.8), atenolol (0.4), glyburide (0.2), chloramphenicol (0.2 - 1.1), sulfamethazine (0.2 - 1.1), sulfamethoxypyridazine (0.3 - 0.4), trimethoprim (0.02 - 0.25)
Carmona et al. (2017)	Spain	Bisfenol A (35.0), ibuprofen (31.0), indomethacin (371.0), methylparaben (9.0), butylparaben (6.0), THC (210.0), triclosan (212.0), warfarin (6.0), allopurinol (7.0), ciprofloxacin (14.0), chloramphenicol (12.0), metoprolol (31.0), acetaminophen (30.0), salicylic acid (39.0), telmisartan (17.0), thiamphenicol (9.0), tetracycline (8.0), vildagliptin (7.0)
Ccancappa-Cartagena et al. (2019)	Spain	Carbamazepine (68.15 - 97.3), chlorotetracycline (81.5), diazepam (78.4 - 1085.2), doxycycline (480.6 - 845.4), oxytetracycline (639.4 - 2033.3), trimethoprim (6.4 - 12.7)
Sadutto et al. (2020)	Spain	Atenolol, Bezafibrate, Bisphenol A, butylparaben, omeprazole, paracetamol, simvastatin, Atorvastatin, caffeine, clofibrinic acid, chloramphenicol, diclofenac, etoricoxib, ethylparaben, flufenamic acid, furosemide, ibuprofen (24), lorazepam, metformin, methylparaben, naproxen (42), propylparaben, salicylic acid (32), thiamphenicol, tramadol, triclosan, and warfarin

Sadutto <i>et al.</i> (2021)	Spain	Atenolol (<LOQ - 16), Atorvastatin (<LOQ - 21), Bezafibrate (<LOQ - 3), Bisphenol A (<LOQ - 21), Butylparaben (<LOQ - 7), Caffeine (4 - 10), Chloramphenicol (<LOQ - 4), clofibrate acid (<LOQ - 5), Codeine (<LOQ - 1), Diclofenac (<LOQ - 10), Ethylparaben (<LOQ - 18), Etoricoxib (<LOQ - 6), Flufenamic acid (2 - 3) Furosemide (9 - 48), Ibuprofen (<LOQ - 100), Metformin (1 - 5), Methylparaben (<LOQ - 19), Naproxen (<LOQ - 31), Omeprazole (<LOQ - 1), Paracetamol (<LOQ - 33), Propylparaben (<LOQ - 12), Salicylic acid (15 - 32), Simvastatin (<LOQ - 29), Thiamphenicol (<LOQ - 14), Tramadol (<LOQ - 13), Triclocarban (<LOQ - 15), Triclosan (7 - 18), Warfarin (8 - 9)
Golovko <i>et al.</i> (2020)	Sweden	Carbamazepine (0.14 - 0.21), DEET (0.13 - 0.19), Tolyltriazole (1.7 - 3), Bicalutamide (0.081 - 0.17), Caffeine (1.1 - 1.8), Lamotrigine (0.62 - 1.1), Metoprolol (1.7 - 13), Fexofenadine (0.11 - 0.6), Tramadol (0.13 - 2.4), Citalopram (2.2 - 28), Oxazepam (0.09 - 0.23), Lidocaine (0.088 - 0.27), TBEP (1.1 - 1.9), Cetirizine (1.8 - 9.7), Propranolol (0.077 - 0.96), Methylparaben (<0.84 - 2.4), Bisoprolol (0.12 - 0.65), Venlafaxine (<0.71 - 7.8), Desvenlafaxine (1.6 - 3.7), Amitriptyline (0.12 - 0.94), Clindamycin (0.18 - 0.29), Sertraline (< 0.16 - 2.8)
Yang <i>et al.</i> (2015)	Taiwan	Ciprofloxacin (<1- 6), Lincomycin (1 - 6), Norfloxacin (2 - 9), acetaminophen (< 1 - 6), caffeine (4 - 8) and triclosan (4 - 5)
Fairbairn <i>et al.</i> (2015)	USA	Acetaminophen (0.2 - 21.0), acetochlor (0.21 - 49.0), atrazine (0.06 - 0.28), caffeine (0.16 - 1.3), carbamazepine (0.03 - 0.1), daidzein (0.17 - 1.1), DEET (1.3 - 3.5)
Deere <i>et al.</i> (2020)	USA	10-Hydroxy-amitriptyline (8.1), Albuterol (1.1), Amitriptyline (122), Amlodipine (52.3), Amphetamine(14.3), Atenolol (7.6), Azithromycin (31.4), Bisphenol A (733), Caffeine Stimulant (25), Carbamazepine (16.4), Cimetidine (25.1), Ciprofloxacin (30.1), Citalopram A (209), Clotrimazole (66.1), DEET (53.5), Desmethyldiltiazem (1.4), Diltiazem (3.2), Diphenhydramine (265), Estriol (7.2), estrone (19.5), Fluoxetine(61), Gemfibrozil (278), Ibuprofen (150), Metformin (36.8), Metoprolol (217), Miconazole (119), Norfluoxetine (39.3), Ofloxacin (29.9), Paroxetine (38), Promethazine (3.8), Propoxyphene (3), Propranolol (85.9), Sertraline (417), Tamoxifen (1.4), Thiabendazole (8.2), Triamterene (337), Triclocarban (3050), Triclosan (129), Valsartan (138), Venlafaxine (16.1), Verapamil (6.7)
Ngo <i>et al.</i> (2021)	Vietnam	Azithromycin, triclocarban, norfloxacin, ciprofloxacin, levofloxacin, DEET, caffeine, enrofloxacin, disopyramide, crotamiton, clarithromycin, mefenamic acid, sulfathiazole, ibuprofen, metropolol, griseofulvin, trimethoprim, roxithromycin, ketoprofen, diclofenac, propranolol, fenoprofen, sulfamerazine, sulphuride, bezafibrate, carbamazepine, sulfamethoxazole, sulfadimethoxine, clenbuterol, lincomycin, cyclophosphamide, sulfamonomethoxine

Table S3. PPCPs detected and its concentration in aquatic organisms from different countries reported in papers published from 2014 to 2022

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
Molins-Delgado <i>et al.</i> (2018)	Brazil	Benzophenone-1 (3.7 - 14.2), benzophenone-3 (17.0 - 81.4), 4-hydroxybenzophenone (40.1 - 1380), 4,4'-dihydroxybenzophenone (9.1 - 462), EHMC (9.5 - 98.8), 4MBC (4.4 - 31.5), octocrylene (5.0 - 68.0)		

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
Martins <i>et al.</i> (2020)	Brazil	Diclofenac (130 - 4469), methylparaben (42 - 236) and octocrylene (3.6 - 51)		
Mello <i>et al.</i> (2022)	Brazil	Chloramphenicol (<1-3.7), furosemide (<0.85-5.3), carbamazepine (<0.02-3.8), 4'-hydroxydiclofenac (<4-9.6), ketoprofen (<0.37-12), naproxen (0.86-10.5), bezafibrate (<0.33-4.5), diclofenac (<0.64-5.6), ibuprofen (<0.79-22), gemfibrozil (<0.49-2.6), simvastatin (<0.49-14)		Chloramphenicol (<0.26-0.5), furosemide (<0.35-6.0), carbamazepine (0.45-0.9), 4'-hydroxydiclofenac (<0.35-0.9), ketoprofen (<0.29-0.9), naproxen (<0.36-1.6), bezafibrate (<0.22-0.6), diclofenac (<0.81-3.0), ibuprofen (1.47-5.4), gemfibrozil (0.08-2.3), simvastatin (<0,14)
Solla <i>et al.</i> (2016)	Canada			DEET (0.7), codeine (8.2), clarithromycin (7.8), diphenhydramine (52.2), azithromycin (10.0), diltiazem (2.2), erythromycin (0.8), amphetamine (4.7), oxycodone (5.6), triclosan (12.5), desmethyldiltiazole (0.2), amitriptyline (30.1), propranolol (8.3), cocaine (0.5), triclocarban (4.4), sertraline (58.7), verapamil (0.3), paroxetine (2.4), norfluoxetine (1.5), fluoxetine (7.2), norverapamil (0.1)
Krogh <i>et al.</i> (2017)	Canada	Bisphenol A (< 1480), furosemide (< 118), gemfibrozil (< 4.43), glyburide (< 17.7), hydrochlorothiazide (< 8.9), 2-OH-ibuprofen (< 59.1), ibuprofen (< 236), naproxen (< 926), triclocarban (15.6), triclosan (10.2), warfarin (< 177), caffeine (<4.4), acetaminophen (1.0), azithromycin (2.5), carbamazepine (7.2), ciprofloxacin (176)		
Muir <i>et al.</i> (2017)	Canada	10-OH-amitriptyline (< 0.03 - 0.06), amitriptyline (0.02 - 0.09), caffeine (1.5 - 5.1 /), citalopram (0.04 - 0.16), DEET (0.08 - 2.6), diphenhydramine (0.06 - 0.25), erythromycin (0.22 - 0.73), fluoxetine (0.15 - 0.4), gemfibrozil (0.15 - 0.86), iopamidol (7.85 - 20.9), norfluoxetine (0.17 - 1.1), oxazepam (0.4 - 33.7), sertraline (0.04 - 0.24), triclocarban (0.32 - 3.35), valsartan (0.42 - 1.23 ), venlafaxine (0.04 - 0.27)		
Chen <i>et al.</i> (2015)	China	Ciprofloxacin (1.4), clarithromycin (0.05), enrofloxacin (1.5 - 1.6), ofloxacin (1.0), salinomycin ( 7.7 - 8.0), sulfadiazine (1.6), sulfamethoxazole (0.4 - 2.2), trimethoprim (	Ciprofloxacin (14.1), clarithromycin (0.2 - 2.7), erythromycin-H2O (2498 - 15090), enrofloxacin (1.3 - 149), narasin (5.9 - 7.2), oxytetracycline (32.1), salinomycin	

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
		2.8 - 58.6)	(6.9 - 8.5), sulfadiazine (1.6 - 2.3), trimethoprim (2.8 - 58.6)	
Xie et al. (2015)	China	17 $\alpha$ -ethynylestradiol (2.3 - 18.8), 17 $\beta$ -estradiol (2.5 - 16.3), carbamazepine (0.1 - 10.7), diclofenac (0.6 - 8.1), erythromycin (0.1 - 76.0), ibuprofen (13.3 - 81.5), propranolol (0.2 - 5.3), roxithromycin (1.0 - 61.2)	17 $\alpha$ -ethynylestradiol (3.8 - 27.2), carbamazepine (0.04 - 0.4), diclofenac (2.4 - 4.1), ibuprofen (24.9 - 73.8), propranolol (0.1 - 1.4), roxithromycin (1.4 - 50.6)	17 $\beta$ -estradiol (4.0 - 12.1), diclofenac (0.4 - 11.7), propranolol (2.6 - 16.2), roxithromycin (2.5 - 16.2)
Sang and Leung (2016)	China	EHMC (5.5 - 9.3), OD-PABA (6.4 - 7.3), BP-8 (3.8 - 4.8), OC (5.4), BP-3 (3.1)		EHMC (17.5 - 51.3), OD-PABA (16.2 - 24.1), BP-8 (8.9 - 14.4), OC (8.8), BP-3 (10.3)
Xia et al. (2017)	China	Erythromycin (5), ofloxacin (40), norfloxacin (34), ciprofloxacin (185), tetracycline (26.5), sulfamethoxazole (3.4), sulfamerazine (0.7), ibuprofen (20.6), diclofenac (18.5), sertraline (4.2), roxithromycin (30.5), carbamazepine (9.0), propranolol (52.4), 17 $\beta$ -estradiol (6.5)		
Liu et al. (2018)	China	Ciprofloxacin (6.4 - 50.0), enoxacin (11.0 - 75.0), enrofloxacin (59.9 - 270.0), norfloxacin (17.0 - 69.0), ofloxacin (8.4 - 39.9), azithromycin (0.4 - 56.0), clarithromycin (2.6 - 50.0), erythromycin (1.4 - 37.0), roxithromycin (0.6 - 36.0), trimethoprim (0.8 - 61.0), sulfachloropyridazine (0.4 - 25.0), sulfadiazine (2.3 - 95.0), sulfadimethoxine (0.6 - 13.0), sulfamerazine (4.3 - 17.0), sulfadimidine (2.2 - 21.0), sulfamethoxazole (25.1 - 110.0), sulfamonomethoxine (5.0 - 9.7), sulfapyridine (1.1 - 4.4), sulfathiazole (1.2 - 3.1)		
Zhang et al. (2018)	China		Sulfadiazine (0.1 - 0.8), sulfamethazine (< 0.07), sulfamethoxazole (0.1 - 1.8), trimethoprim (0.1 - 0.7), norfloxacin (0.8 - 4.4), ciprofloxacin (0.2 - 2.5), enrofloxacin (0.2 - 0.7), ofloxacin (0.2 - 1.5), clarithromycin (0.1 - 0.2), erythromycin (0.1 - 3.8), chloramphenicol (< 2.1), azithromycin (1.9)	
Yao et al. (2018)	China	DEET (0.4 - 6.5), methylparaben (0.5 - 5.7), ethylparaben (0.3 - 0.9), propylparaben (0.2 - 4.6), triclocarban (0.6 - 5.6), triclosan (2.6 - 79.5)		

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
Chen <i>et al.</i> (2018)	China	Ciprofloxacin (0.8 - 18), enrofloxacin (0.9 - 299), erythromycin (0.05 - 3.7), norfloxacin (0.01 - 9.9), sulfamethazine (0.3 - 28)		
Xie <i>et al.</i> (2019)	China	Sulfamethoxazole (1.6), trimethoprim (0.3), ciprofloxacin (9.1), norfloxacin (31.0), ofloxacin (3.0), erythromycin (0.9), acetaminophen (0.4), naproxen (9.0), ibuprofen (562.0), ketoprofen (267.0), diclofenac acid (0.4), diphenhydramine (1.1), triclosan (0.6), bisphenol A (38.0)		
Lu <i>et al.</i> (2019)	China	Methylparaben (0.13 - 24.8), ethylparaben (< 0.003 - 0.33), propylparaben (< 0.003 - 0.41), butylparaben (< 0.003 - 0.36), benzylparaben (< 0.003 - 0.1), triclosan (< 0.076 - 6.5)		
Tang <i>et al.</i> (2019)	China	4-MBC (0.5 - 16.2), benzophenone-3 (0.4 - 100.0), EHMC (3.8 - 41.2), EHS (< 0.5 - 8.9), HMS (0.8 - 11.0), octocrylene (0.7 - 13.7), OD-PABA (0.8 - 12.2), UV-326 (0.7 - 14.6), UV-327 (1.1 - 10.4), UV-329 (0.7 - 15.9)		
Yang <i>et al.</i> (2020)	China	Roxithromycin (0.3 - 12.4), ofloxacin (0.3 - 21.8), norfloxacin (0.3 - 16.4), ciprofloxacin (0.3 - 16.4), sulfamethoxazole (0.2 - 4.2), ibuprofen (0.5 - 5.2), diclofenac (0.4 - 3.7), bezafibrate (0.6 - 8.4), caffeine (1.1 - 8.9), fluoxetine (0.3 - 6.1), citalopram (1.0 - 4.6), sertraline (2.7 - 19.9), ketoconazole (0.4 - 2.3), clozapine (0.6 - 2.8), quetiapine (1.0), aripiprazole (0.3 - 2.5), carbamazepine (0.4 - 3.5), EHMC (4.3 - 32.4), OD-PABA (0.4 - 12.3), homosalate (0.3 - 14.6), benzophenone-4 (0.1 - 4.2), benzophenone-3 (0.6 - 15.4), 2-Ethylhexyl salicylate (1.5 - 5.9), octocrylene (0.2 - 39.1), 2-phenyl benzimidazole-5-sulfonic acid (0.3 - 7.7), 4MBC (1.1 - 4.1), avobenzone (1.1 - 8.8)	Roxithromycin (4.6 - 12.4), ofloxacin (3.6 - 21.6), ciprofloxacin (6.4 - 9.0), sulfamethoxazole (2.5 - 5.4), ibuprofen (4.0 - 11.6), diclofenac (4.4 - 5.9), caffeine (2.3 - 4.9), fluoxetine (4.6), citalopram (2.2), sertraline (14.5 - 28.6), ketoconazole (1.1 - 8.6), clozapine (1.8), quetiapine (1.0), aripiprazole (2.4), carbamazepine (0.5 - 4.9), EHMC (12.4 - 16.2), OD-PABA (4.2), homosalate (3.2 - 6.3), benzophenone-4 (3.6), benzophenone-3 (9.3 - 20.5), 2-Ethylhexyl salicylate (5.4 - 12.4), octocrylene (6.6 - 11.2), 2-phenyl benzimidazole-5-sulfonic acid (2.9 - 5.4), 4MBC (1.5 - 25.5), avobenzone (4.2 - 6.1)	
Pemberthy <i>et al.</i> (2020)	Colombia	Not detected (diclofenac, ibuprofen and triclosan)		
Koba <i>et al.</i> (2018)	Czech Republic	Metoprolol (< 0.01 - 11.0), carbamazepine (< 0.3 - 1.4), citalopram (0.8 - 16.0), sertraline (0.6 - 61.0), venlafaxine (0.5 - 3.9), metoprolol acid (0.7 - 26.0)		

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
Miller <i>et al.</i> (2015)	England		Carbamazepine (< 6.0 - 6.0); Diazepam (6.0 - 9.0); Temazepam (<6.0); Trimethoprim (< 5.0 - 5.0); Warfarin (n. d. - 7.0 ); Nimesulide (< 4.0 - 16.0)	
Wilkinson <i>et al.</i> (2018)	England		Acetominophen (0.5), diclofenac (0.7), bisphenol-S (5.1), bisphenol-A (< LOQ)	
Picot-Groz <i>et al.</i> (2018)	France			EHMC (14.0 - 32), octocrylene (46.0 - 967), OD-PABA (31.0 - 44), UV-P (< 1.0)
Miossec <i>et al.</i> (2020)	France	Azithromycin (0.4), clarithromycin (0.6 - 1), acetaminophen (1.4), caffeine (0.3 - 7.7)		
Díaz-Cruz <i>et al.</i> (2019)	Greece	Benzophenone-2 (11.8 - 41.9), benzophenone-3 (< LOQ - 1.8), benzophenone-8 (1.8)		
Wolecki <i>et al.</i> (2019)	Gulf of Gdansk			Ibuprofen (730 ± 290), naproxen (473 ± 76), diclofenac (560 ± 130), estrone (256 ± 64)
McEneff <i>et al.</i> (2014)	Ireland			Carbamazepine (<0.6), mefenamic acid (<23), trimethoprim (<4)
Peña-Herrera <i>et al.</i> (2019)	Italy	Acetaminophen (24.0), propranolol (79.6), venlafaxine (< 1.8)		
Tanoue <i>et al.</i> (2014)	Japan	Bezafibrate (<LOQ – 0.14); carbamazepine (<LOQ – 0.11); ibuprofen (2.5 – 3.8); indomethacin (0.35 - 5.4); mefenamic acid (4.9 – 19.0); crotamiton (0.11 - 4.3); sertraline (1.0 – 9.2); DEET (<LOQ – 9.2); Triclosan (13.0 - 910.0); Triclocarban (0.51 - 4.3)		
Serra-Compte <i>et al.</i> (2017)	Netherlands	Azithromycin (< LOQ), roxithromycin (0.40 - 1.12), tilmicosin (0.23 - 0.42), tylosin (0.19 - 0.24), tetracycline (2.38 - 4.96)		Azithromycin (0.77 - 2.13), roxithromycin (< LOQ), tilmicosin (< LOQ), tylosin (< LOQ), tetracycline (5.63 ± 0.41)
Álvarez-Muñoz <i>et al.</i> (2015)	Portugal, Spain, Italy, Netherlands, and Norway	Bisphenol A (5.6 - 9.1); Caffeine (1.6 - 26.6); Citalopram (< 0,16); Ethylparaben (003 - 0.14); Methylparaben (1.3 - 16.4); Propylparaben (0.47 - 1.5); Triclosan (< 0.75); Venlafaxine (< 0.15)		
Ali <i>et al.</i> (2018)	Saudi Arabia	Atenolol (5.4 - 62.7), ranitidine (< 1.7 - 26.7), chlorpheniramine malate (5.0 - 62.1), metronidazole (1.18 - 82.1), methylparaben (4.8 - 21.2), trimethoprim (1.0 - 44.9), caffeine (2.5 - 73.6), amitriptyline (5.8 - 18.3), carbamazepine (1.6 - 33.8), ibuprofen (< 45.0 - 93.5), DEET (< 0.4 - 63.8),		

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
		sulfamethoxazole (8.3 - 11.2), atrazine (4.7 - 70.0), warfarin (1.8 - 8.7), FLX (n. d. - 9.4)		
Ojemaye and Petrik (2019)	South Africa	Diclofenac (551.8 - 1812.0), sulfamethoxazole (28.5 - 688.6), phenytoin (55.7 - 222.2), carbamazepine (5.2 - 22.9), caffeine (1.8 - 64.8), acetaminophen (9.0 - 33.3)		
Kim <i>et al.</i> (2017)	South Korea	Caffeine (1.0 - 1.4), ciprofloxacin (3.16), crotamiton (0.1 - 0.5), erythromycin (0.7 - 4.0), fenbendazole (0.05 - 0.11), fenbendazole (0.05 - 0.11), praziquantel (1.5 - 8.6), propranolol (1.7), sulfadiazine (0.05 - 0.5), sulfathiazole (0.2 - 0.7), spiramycin (0.09), thiabendazole (0.13 - 0.14), trimethoprim (0.04 - 13.6)		
Gago-Ferrero <i>et al.</i> (2015)	Spain	Benzophenone-3 (11.2 - 24.3); EHMC (12.2 - 241.7); 4MBC (< 2.3 - 2.7); Octocrylene (OC) (25.7 - 30.4)		
Moreno-González <i>et al.</i> (2016)	Spain	Carbamazepine (0.1 - 6.3), citalopram (0.4 - 2.3), diclofenac (1.3 - 2.2), diazepam (< 0.2 - 1.8), hydrochlorothiazide (1.6 - 10.5), levamisole (0.2 - 2.1), metoprolol (0.7), nadolol (0.6), propranolol (0.3 - 0.5), venlafaxine (0.3 - 3.1)		
Ruhí <i>et al.</i> (2016)	Spain			Diclofenac (12.4), ibuprofen (182.7), gemfibrozil (43.9), TBEP (58.9), bisphenol A (8.7), estrone (23.2)
Carmona <i>et al.</i> (2017)	Spain	Bisfenol A (33.0), diclofenac (5.0), gemfibrozil (29.0), ibuprofen (22.0), propylparaben (15.0), butylparaben (21.0), THC (6.0), 4-epitetracycline (7.0), alprazolam (6.0), azithromycin (12.0), carbamazepine (5.0), ciprofloxacin (6.0), clarithromycin (7.0), metoprolol (34.0), propranolol (21), sulfamethoxazole (13.0), telmisartan (12), thiamphenicol (25), tetracycline (24)		

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
Serra-Compte <i>et al.</i> (2017)	Spain	Azithromycin (< LOQ), roxithromycin (0.40 - 1.12), tilmicosin (0.23 - 0.42), tylosin (0.19 - 0.24), tetracycline (2.38 - 4.96)		Azithromycin (0.77 - 2.13), roxithromycin (< LOQ), tilmicosin (< LOQ), tylosin (< LOQ), tetracycline (5.63 ± 0.41)
Álvarez-Muñoz <i>et al.</i> (2019)	Spain		10	Atrazine (2.64), Metolachlor (1.15), Bentazone (5.1), Acetamiprid (9.5), 1H-benzotriazole (2.4), Bisphenol A (4227.4), caffeine (99.9), Ethylparaben (3.6), Methylparaben (6.7), propylparaben (0.7)
Pico <i>et al.</i> (2019)	Spain	Carazolol (0.4 - 3.8), propranolol 0.5 - 4.5), sotalol (0.05 - 0.26), citalopram (0.2 - 1.4), Venlafaxine (0.05 - 0.6), diclofenac (4.1 - 15.3), salbutamol (0.2 - 2.6), benzylparaben (0.3 - 0.5), bisphenol A (9.8 - 223.9), estrone (0.1 - 2.0), ethylparaben (0.06 - 0.8), methylparaben (1.0 - 84.7), propylparaben (0.6 - 7.4), TBEP (2.4 - 52.9), TCEP (0.3 - 5.1), tolyltriazole (1.2 - 10.2), triclosan (0.6 - 17.4), benzophenone-1 (1.4 - 20.4), benzofenone-3 (1.3 - 24.3), EHMC (0.2 - 241.7), 4MBC (0.03 - 4.1), OC (1.4 - 50.7), PFBA (4.9 - 20.6), PFPeA (2.2 - 946.0), PFBS (4.7 - 7.12), PFHxA (431.3 - 1738.0), PFHpA (1.8 - 111.3), PFHxS (3.3 - 8.9), PFOA (5.0 - 31.4), PFOS (1.3 - 529.9), PFNA (2.2 - 71.5), PFDA (1.2 - 25.2), PFDS (1.2 - 19.4), PFUnDA (9.9 - 57.1), PFDoA (0.02 - 0.5), PFOSA (1.1 - 14.3), FOEA (21.0 - 77.4),		
Rojo <i>et al.</i> (2019)	Uruguay	Atenolol (0.1 - 0.6), carazolol (0.1 - 0.2), carbamazepine (0.2 - 0.9), 10,11-epoxycarbamazepine (0.05 - 0.6), 2-hydroxycarbamazepine (0.4 - 10.2), clopidogrel (0.1 - 0.5); codeine (0.1 - 1.1), diazepam (0.05 - 0.2), hydrochlorothiazide (0.3 - 6.0), lorazepam (0.2 - 0.7), metoprolol (0.4 - 2.4), nadolol (0.1 - 0.5), propranolol (0.2 - 1.9), salbutamol (0.1 - 0.3), sotalol (0.02 - 0.15); venlafaxine (0.2 - 1.6)		

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
Dodder <i>et al.</i> (2014)	USA			Amitriptyline (0.4 - 6.2); Amphetamine (2.3 - 20.0); Atenolol (0.45 - 13.0); Caffeine (14.0 - 140.0); Cocaine (0.28 - 1.7); Diphenhydramine (0.87 - 11.0) ; Enrofloxacin (1.3 - 12.0) ; Erythromycin (0.14 - 2.0); Lomefloxacin (18.0 - 170.0); Ofloxacin (1.2 - 18.0); Sertraline (1.3 - 5.5); Sulfamethazine (24.0 - 430.0)
Done and Halden (2015)	USA	Oxytetracycline (2.7 - 8.6); Virginiamycin (5.2); 4-epoxytetracycline (4.1)		
Du <i>et al.</i> (2015)	USA			Propranolol (2.7 - 8.6); Caffeine (7.6); Carbamazepine (1.2); Diphenhydramine (1.0); Fluoxetine (13.0); Methylsertraline (42)
Du <i>et al.</i> (2016)	USA	Carbamazepine (<LOQ), Diphenhydramine (0.2 - 1.5), Erythromycin (1.6 - 4), Trimethoprim (< LOQ)		
Arnnok <i>et al.</i> (2017)	USA	Bupropion (0.6 - 1.5), caffeine (5.8 - 278.6), carbamazepine (0.5 - 1.6), citalopram (0.8 - 3.3), diphenhydramine (1.0 - 7.3), dilantin (11.3 - 17.2), erythromycin (3.7 - 36.4), iopamidol (396.6 - 1058.5), norfluoxetine (1.5 - 33.9), norsertraline (34.3 - 400.1), sertraline (3.8 - 16.9)		
He <i>et al.</i> (2017)	USA			Benzophenone-3 (35.4 ± 1.5), EHMC (240.0 ± 13.0), homosalate (107.0 ± 4.0), octocrylene (14.4 ± 0.6), estrone (70.3 ± 3.2), 17β-estradiol (15.2 ± 0.5), 17α-ethinylestradiol (15.3 ± 0.7)
Haddad <i>et al.</i> (2018)	USA	Amitriptyline (3.2 - 10.0), caffeine (0.76 - 2.0), carbamazepine (0.21 - 0.57), diltiazem (0.08 - 0.71), diphenhydramine (0.1 - 3.7), fluoxetine (1.0 - 4.8), methylphenidate (0.04 - 3.1), norfluoxetine, (0.8 - 5.8), sertraline (0.65 - 5.3)		
Huerta <i>et al.</i> (2018)	USA	Diclofenac (0.7), nadolol (2.1 - 2.3), propranolol (0.4), sotalol (21.4 - 37.5), hydrochlorothiazide (0.8 - 1.1), carbamazepine (3.0 - 8.2), citalopram (1.2 - 2.4), diazepam (1.9), 2-hydroxy-carbamazepine (0.7 - 2.5), sertraline (17.1), salbutamol (3.4 - 6.5), venlafaxine (4.6 - 22.9)		

Reference	Country	Detected compounds in Fish (ng/g)	Detected compounds in Shrimp (ng/g)	Detected compounds in Mussel (ng/g)
Bai and Acharya (2019)	USA			Bisphenol A ( 47.0), salicylic Acid ( 430.0), triclosan (24.0 - 28.0), testosterone (6.3 - 20.0)
Deere <i>et al.</i> (2020)	USA	Amitriptyline (0.6), Caffeine (74.9), DEET (2450), Diphenhydramine (2.9), Metformin (22.5), Sertraline (1), Sulfanilamide (74.5)		

### Uncategorized References

1. M. M. Mastrángelo, M. E. Valdés, B. Eissa, N. A. Ossana, D. Barceló, S. Sabater, S. Rodríguez-Mozaz and A. D. N. Giorgi, Occurrence and accumulation of pharmaceutical products in water and biota of urban lowland rivers, *Sci. Total Environ.*, 2022, **828**, 154303.
2. F. Vanryckeghem, S. Huysman, H. Van Langenhove, L. Vanhaecke and K. Demeestere, Multi-residue quantification and screening of emerging organic micropollutants in the Belgian Part of the North Sea by use of Speedisk extraction and Q-Orbitrap HRMS, *Mar. Pollut. Bull.*, 2019, **142**, 350-360.
3. M. B. Campanha, A. T. Awan, D. N. de Sousa, G. M. Grosseli, A. A. Mozeto and P. S. Fadini, A 3-year study on occurrence of emerging contaminants in an urban stream of São Paulo State of Southeast Brazil, *Environ. Sci. Pollut. Res.*, 2015, **22**, 7936-7947.
4. S. S. Caldas, J. L. O. Arias, C. Rombaldi, L. L. Mello, M. B. Cerqueira, A. F. Martins and E. G. Primel, Occurrence of pesticides and PPCPs in surface and drinking water in southern Brazil: data on 4-year monitoring, *J. Braz. Chem. Soc.*, 2019, **30**, 71-80.
5. C. M. E. Pompei, L. C. Campos, B. F. da Silva, J. C. Fogo and E. M. Vieira, Occurrence of PPCPs in a Brazilian water reservoir and their removal efficiency by ecological filtration, *Chemosphere*, 2019, **226**, 210-219.
6. M. J. S. Chaves, S. C. Barbosa, M. d. M. Malinowski, D. Volpato, I. B. Castro, T. C. R. S. Franco and E. G. Primel, Pharmaceuticals and personal care products in a Brazilian wetland of international importance: Occurrence and environmental risk assessment, *Sci. Total Environ.*, 2020, **734**, 139374.
7. A. Rico, R. de Oliveira, G. S. de Souza Nunes, C. Rizzi, S. Villa, I. López-Heras, M. Vighi and A. V. Waichman, Pharmaceuticals and other urban contaminants threaten Amazonian freshwater ecosystems, *Environ. Int.*, 2021, **155**, 106702.
8. V. Roveri, L. L. Guimarães, W. Toma and A. T. Correia, Occurrence and ecological risk assessment of pharmaceuticals and cocaine in the urban drainage channels of Santos beaches (São Paulo, Brazil): a neglected, but sensitive issue, *Environ. Sci. Pollut. Res.*, 2021, **28**, 65595-65609.
9. A.-M. Pisetta, V. Roveri, L. L. Guimarães, T. M. N. de Oliveira and A. T. Correia, First report on the occurrence of pharmaceuticals and cocaine in the coastal waters of Santa Catarina, Brazil, and its related ecological risk assessment, *Environ. Sci. Pollut. Res.*, 2022, DOI: 10.1007/s11356-022-20312-z.
10. S. Solla, È. A. Gilroy, J. Klinck, L. King, R. McInnis, J. Struger, S. Backus and P. Gillis, Bioaccumulation of pharmaceuticals and personal care products in the unionid mussel *Lasmigona costata* in a river receiving wastewater effluent, *Chemosphere*, 2016, **146**, 486-496.
11. S. Comtois-Marotte, T. Chappuis, S. V. Duy, N. Gilbert, A. Lajeunesse, S. Taktek, M. Desrosiers, É. Veilleux and S. Sauvé, Analysis of emerging contaminants in water and solid samples using high resolution mass spectrometry with a Q Exactive orbital ion trap and estrogenic activity with YES-assay, *Chemosphere*, 2017, **166**, 400-411.
12. J. Krogh, S. Lyons and C. J. Lowe, Pharmaceuticals and personal care products in municipal wastewater and the marine receiving environment near Victoria Canada, *Front. Mar. Sci.*, 2017, **4**, 415.
13. G. Dai, B. Wang, J. Huang, R. Dong, S. Deng and G. Yu, Occurrence and source apportionment of pharmaceuticals and personal care products in the Beiyun River of Beijing, China, *Chemosphere*, 2015, **119**, 1033-1039.
14. R. Ma, B. Wang, S. Lu, Y. Zhang, L. Yin, J. Huang, S. Deng, Y. Wang and G. Yu, Characterization of pharmaceutically active compounds in Dongting Lake, China: occurrence, chiral profiling and environmental risk, *Sci. Total Environ.*, 2016, **557**, 268-275.
15. Q. Sun, Y. Li, M. Li, M. Ashfaq, M. Lv, H. Wang, A. Hu and C.-P. Yu, PPCPs in Jiulong River estuary (China): spatiotemporal distributions, fate, and their use as chemical markers of wastewater, *Chemosphere*, 2016, **150**, 596-604.

16. F.-J. Peng, C.-G. Pan, M. Zhang, N.-S. Zhang, R. Windfeld, D. Salvito, H. Selck, P. J. Van den Brink and G.-G. Ying, Occurrence and ecological risk assessment of emerging organic chemicals in urban rivers: Guangzhou as a case study in China, *Sci. Total Environ.*, 2017, **589**, 46-55.
17. Z. Xie, G. Lu, Z. Yan, J. Liu, P. Wang and Y. Wang, Bioaccumulation and trophic transfer of pharmaceuticals in food webs from a large freshwater lake, *Environ. Pollut.*, 2017, **222**, 356-366.
18. M. A. Asghar, Q. Zhu, S. Sun, Y. e. Peng and Q. Shuai, Suspect screening and target quantification of human pharmaceutical residues in the surface water of Wuhan, China, using UHPLC-Q-Orbitrap HRMS, *Sci. Total Environ.*, 2018, **635**, 828-837.
19. S. Li, W. Shi, H. Li, N. Xu, R. Zhang, X. Chen, W. Sun, D. Wen, S. He and J. Pan, Antibiotics in water and sediments of rivers and coastal area of Zhuhai City, Pearl River estuary, south China, *Sci. Total Environ.*, 2018, **636**, 1009-1019.
20. H. Lin, L. Chen, H. Li, Z. Luo, J. Lu and Z. Yang, Pharmaceutically active compounds in the Xiangjiang River, China: Distribution pattern, source apportionment, and risk assessment, *Sci. Total Environ.*, 2018, **636**, 975-984.
21. J. Lu, H. Li, Z. Luo, H. Lin and Z. Yang, Occurrence, distribution, and environmental risk of four categories of personal care products in the Xiangjiang River, China, *Environ. Sci. Pollut. Res.*, 2018, **25**, 27524-27534.
22. X. Mei, Q. Sui, S. Lyu, D. Wang and W. Zhao, Pharmaceuticals and personal care products in the urban river across the megacity Shanghai: occurrence, source apportionment and a snapshot of influence of rainfall, *J. Hazard. Mater.*, 2018, **359**, 429-436.
23. R. Zhang, J. Pei, R. Zhang, S. Wang, W. Zeng, D. Huang, Y. Wang, Y. Zhang, Y. Wang and K. Yu, Occurrence and distribution of antibiotics in mariculture farms, estuaries and the coast of the Beibu Gulf, China: Bioconcentration and diet safety of seafood, *Ecotox. Environ. Safe.*, 2018, **154**, 27-35.
24. L. Yao, J.-L. Zhao, Y.-S. Liu, Q.-Q. Zhang, Y.-X. Jiang, S. Liu, W.-R. Liu, Y.-Y. Yang and G.-G. Ying, Personal care products in wild fish in two main Chinese rivers: bioaccumulation potential and human health risks, *Sci. Total Environ.*, 2018, **621**, 1093-1102.
25. H. Chen, S. Liu, X.-R. Xu, Z.-H. Diao, K.-F. Sun, Q.-W. Hao, S.-S. Liu and G.-G. Ying, Tissue distribution, bioaccumulation characteristics and health risk of antibiotics in cultured fish from a typical aquaculture area, *J. Hazard. Mater.*, 2018, **343**, 140-148.
26. N. Hanna, P. Sun, Q. Sun, X. Li, X. Yang, X. Ji, H. Zou, J. Ottoson, L. E. Nilsson and B. Berglund, Presence of antibiotic residues in various environmental compartments of Shandong province in eastern China: its potential for resistance development and ecological and human risk, *Environ. Int.*, 2018, **114**, 131-142.
27. S. He, D. Dong, X. Zhang, C. Sun, C. Wang, X. Hua, L. Zhang and Z. Guo, Occurrence and ecological risk assessment of 22 emerging contaminants in the Jilin Songhua River (Northeast China), *Environ. Sci. Pollut. Res.*, 2018, **25**, 24003-24012.
28. Y. Cui, Y. Wang, C. Pan, R. Li, R. Xue, J. Guo and R. Zhang, Spatiotemporal distributions, source apportionment and potential risks of 15 pharmaceuticals and personal care products (PPCPs) in Qinzhous Bay, South China, *Mar. Pollut. Bull.*, 2019, **141**, 104-111.
29. H. Xie, H. Hao, N. Xu, X. Liang, D. Gao, Y. Xu, Y. Gao, H. Tao and M. Wong, Pharmaceuticals and personal care products in water, sediments, aquatic organisms, and fish feeds in the Pearl River Delta: Occurrence, distribution, potential sources, and health risk assessment, *Sci. Total Environ.*, 2019, **659**, 230-239.
30. S.-S. Cao, Y.-P. Duan, Y.-J. Tu, Y. Tang, J. Liu, W.-D. Zhi and C. Dai, Pharmaceuticals and personal care products in a drinking water resource of Yangtze River Delta Ecology and Greenery Integration Development Demonstration Zone in China: Occurrence and human health risk assessment, *Sci. Total Environ.*, 2020, **721**, 137624.
31. C. Pan, Y. Bao and B. Xu, Seasonal variation of antibiotics in surface water of Pudong New Area of Shanghai, China and the occurrence in typical wastewater sources, *Chemosphere*, 2020, **239**, 124816.
32. Y. Zhang, L. Duan, B. Wang, C. S. Liu, Y. Jia, N. Zhai, L. Blaney and G. Yu, Efficient multiresidue determination method for 168 pharmaceuticals and metabolites: Optimization and application to raw wastewater, wastewater effluent, and surface water in Beijing, China, *Environ. Pollut.*, 2020, **261**, 114113.
33. H. Yang, G. Lu, Z. Yan, J. Liu, H. Dong, X. Bao, X. Zhang and Y. Sun, Residues, bioaccumulation, and trophic transfer of pharmaceuticals and personal care products in highly urbanized rivers affected by water diversion, *J. Hazard. Mater.*, 2020, **391**, 122245.
34. X. Chen, L. Lei, S. Liu, J. Han, R. Li, J. Men, L. Li, L. Wei, Y. Sheng, L. Yang, B. Zhou and L. Zhu, Occurrence and risk assessment of pharmaceuticals and personal care products (PPCPs) against COVID-19 in lakes and WWTP-river-estuary system in Wuhan, China, *Sci. Total Environ.*, 2021, **792**, 148352.
35. X. Jiang, Y. Zhu, L. Liu, X. Fan, Y. Bao, S. Deng, Y. Cui, G. Cagnetta, J. Huang and G. Yu, Occurrence and variations of pharmaceuticals and personal-care products in rural water bodies: A case study of the Taige Canal (2018–2019), *Sci. Total Environ.*, 2021, **762**, 143138.
36. L. Li, X. Zhao, D. Liu, K. Song, Q. Liu and Y. He, Occurrence and ecological risk assessment of PPCPs in typical inflow rivers of Taihu lake, China, *J. Environ. Manage.*, 2021, **285**, 112176.
37. Y. Sun, G. Lu, J. Li, T. Dang, C. Xue, J. Liu and Z. Yan, Multimedia distribution and trophic transfer of PPCPs in the middle and lower reaches of the Yarlung Zangbo River, *Environ. Pollut.*, 2021, **271**, 116408.

38. W. An, L. Duan, Y. Zhou, B. Wang and G. Yu, Pollution characterization of pharmaceutically active compounds (PhACs) in the northwest of Tai Lake Basin, China: Occurrence, temporal changes, riverine flux and risk assessment, *J. Hazard. Mater.*, 2022, **422**, 126889.
39. S. Lu, B. Wang, M. Xin, J. Wang, X. Gu, M. Lian, Y. Li, C. Lin, W. Ouyang, X. Liu and M. He, Insights into the spatiotemporal occurrence and mixture risk assessment of household and personal care products in the waters from rivers to Laizhou Bay, southern Bohai Sea, *Sci. Total Environ.*, 2022, **810**, 152290.
40. L. Ma, Y. Liu, Q. Yang, L. Jiang and G. Li, Occurrence and distribution of Pharmaceuticals and Personal Care Products (PPCPs) in wastewater related riverbank groundwater, *Sci. Total Environ.*, 2022, **821**, 153372.
41. C. Wang, Y. Lu, C. Wang, C. Xiu, X. Cao, M. Zhang and S. Song, Distribution and ecological risks of pharmaceuticals and personal care products with different anthropogenic stresses in a coastal watershed of China, *Chemosphere*, 2022, **303**, 135176.
42. X. Xu, Y. Xu, N. Xu, B. Pan and J. Ni, Pharmaceuticals and personal care products (PPCPs) in water, sediment and freshwater mollusks of the Dongting Lake downstream the Three Gorges Dam, *Chemosphere*, 2022, **301**, 134721.
43. D. F. Bedoya-Ríos, J. A. Lara-Borrero, V. Duque-Pardo, C. A. Madera-Parra, E. M. Jimenez and A. F. Toro, Study of the occurrence and ecosystem danger of selected endocrine disruptors in the urban water cycle of the city of Bogotá, Colombia, *J. Environ. Sci. Health A*, 2018, **53**, 317-325.
44. D. Pemberthy, Y. Padilla, A. Echeverri and G. A. Peñuela, Monitoring pharmaceuticals and personal care products in water and fish from the Gulf of Urabá, Colombia, *Heliyon*, 2020, **6**, e04215.
45. A. Causanilles, C. Ruepert, M. Ibáñez, E. Emke, F. Hernández and P. de Voogt, Occurrence and fate of illicit drugs and pharmaceuticals in wastewater from two wastewater treatment plants in Costa Rica, *Sci. Total Environ.*, 2017, **599**, 98-107.
46. O. Koba, K. Grabicova, D. Cerveny, J. Turek, J. Kolarova, T. Randak, V. Zlabek and R. Grabic, Transport of pharmaceuticals and their metabolites between water and sediments as a further potential exposure for aquatic organisms, *J. Hazard. Mater.*, 2018, **342**, 401-407.
47. A. Voloshenko-Rossin, G. Gasser, K. Cohen, J. Gun, L. Cumbal-Flores, W. Parra-Morales, F. Sarabia, F. Ojeda and O. Lev, Emerging pollutants in the Esmeraldas watershed in Ecuador: discharge and attenuation of emerging organic pollutants along the San Pedro–Guayllabamba–Esmeraldas rivers, *Environ. Sci. Proces. Impacts*, 2015, **17**, 41-53.
48. J. L. Wilkinson, P. S. Hooda, J. Swinden, J. Barker and S. J. E. p. Barton, Spatial (bio) accumulation of pharmaceuticals, illicit drugs, plasticisers, perfluorinated compounds and metabolites in river sediment, aquatic plants and benthic organisms, *Environ. Pollut.*, 2018, **234**, 864-875.
49. D. Kötke, J. Gandrass, Z. Xie and R. Ebinghaus, Prioritised pharmaceuticals in German estuaries and coastal waters: Occurrence and environmental risk assessment, *Environ. Pollut.*, 2019, **255**, 113161.
50. M. S. Díaz-Cruz, D. Molins-Delgado, M. P. Serra-Roig, E. Kalogianni, N. T. Skoulikidis and D. Barceló, Personal care products reconnaissance in EVROTAS river (Greece): water-sediment partition and bioaccumulation in fish, *Sci. Total Environ.*, 2019, **651**, 3079-3089.
51. S. Huber, M. Remberger, L. Kaj, M. Schlabach, H. Ó. Jörundsdóttir, J. Vester, M. Arnórsson, I. Mortensen, R. Schwartson and M. Dam, A first screening and risk assessment of pharmaceuticals and additives in personal care products in waste water, sludge, recipient water and sediment from Faroe Islands, Iceland and Greenland, *Sci. Total Environ.*, 2016, **562**, 13-25.
52. N. K. Khalid, D. Devadasan, U. K. Aravindakumar, Screening and quantification of emerging contaminants in Periyar River, Kerala (India) by using high-resolution mass spectrometry (LC-Q-ToF-MS), *Environ. Monit. Assessment*, 2018, **190**, 1-12.
53. M. Kumar, B. Ram, R. Honda, C. Poopipattana, V. D. Canh, T. Chaminda and H. Furumai, Concurrence of antibiotic resistant bacteria (ARB), viruses, pharmaceuticals and personal care products (PPCPs) in ambient waters of Guwahati, India: Urban vulnerability and resilience perspective, *Sci. Total Environ.*, 2019, **693**, 133640.
54. B. M. Sharma, J. Bečanová, M. Scheringer, A. Sharma, G. K. Bharat, P. G. Whitehead, J. Klánová and L. Nizzetto, Health and ecological risk assessment of emerging contaminants (pharmaceuticals, personal care products, and artificial sweeteners) in surface and groundwater (drinking water) in the Ganges River Basin, India, *Sci. Total Environ.*, 2019, **646**, 1459-1467.
55. P. Biswas and B. P. Vellanki, Occurrence of emerging contaminants in highly anthropogenically influenced river Yamuna in India, *Sci. Total Environ.*, 2021, **782**, 146741.
56. C. M. Gopal, K. Bhat, B. R. Ramaswamy, V. Kumar, R. K. Singhal, H. Basu, H. N. Udayashankar, S. G. VasanthaRaju, Y. Praveenkumarreddy, Shailesh, Y. Lino and K. Balakrishna, Seasonal occurrence and risk assessment of pharmaceutical and personal care products in Bengaluru rivers and lakes, India, *J. Environ. Chem. Eng.*, 2021, **9**, 105610.
57. A. H. Khan, H. A. Aziz, N. A. Khan, A. Dhingra, S. Ahmed and M. Naushad, Effect of seasonal variation on the occurrences of high-risk pharmaceutical in drain-laden surface water: A risk analysis of Yamuna River, *Sci. Total Environ.*, 2021, **794**, 148484.

58. V. Singh and S. Suthar, Occurrence, seasonal variations, and ecological risk of pharmaceuticals and personal care products in River Ganges at two holy cities of India, *Chemosphere*, 2021, **268**, 129331.
59. J. Renganathan, I. U. H. S. K. Ramakrishnan, M. K. Ravichandran and L. Philip, Spatio-temporal distribution of pharmaceutically active compounds in the River Cauvery and its tributaries, South India, *Sci. Total Environ.*, 2021, **800**, 149340.
60. M. Kumar, K. Kuroda, D. Barcelo and H. Furumai, Monsoon dilutes the concurrence but increases the correlation of viruses and Pharmaceuticals and Personal Care Products (PPCPs) in the urban waters of Guwahati, India: The context of pandemic viruses, *Sci. Total Environ.*, 2022, **813**, 152282.
61. G. McEneff, L. Barron, B. Kelleher, B. Paull and B. Quinn, A year-long study of the spatial occurrence and relative distribution of pharmaceutical residues in sewage effluent, receiving marine waters and marine bivalves, *Sci. Total Environ.*, 2014, **476**, 317-326.
62. A. S. Rodríguez, M. R. Sanz and J. R. B. Rodríguez, Occurrence of eight UV filters in beaches of Gran Canaria (Canary Islands). An approach to environmental risk assessment, *Chemosphere*, 2015, **131**, 85-90.
63. L. Mandaric, E. Diamantini, E. Stella, K. Cano-Paoli, J. Valle-Sistac, D. Molins-Delgado, A. Bellin, G. Chiogna, B. Majone and M. S. Diaz-Cruz, Contamination sources and distribution patterns of pharmaceuticals and personal care products in Alpine rivers strongly affected by tourism, *Sci. Total Environ.*, 2017, **590**, 484-494.
64. M. L. Feo, R. Bagnati, A. Passoni, F. Riva, D. S. Manta, M. Sprovieri, A. Traina, E. Zuccato and S. Castiglioni, Pharmaceuticals and other contaminants in waters and sediments from Augusta Bay (southern Italy), *Sci. Total Environ.*, 2020, **739**, 139827.
65. F. Cappelli, O. Longoni, J. Rigato, M. Rusconi, A. Sala, I. Fochi, M. T. Palumbo, S. Polesello, C. Roscioli, F. Salerno, F. Stefani, R. Bettinetti and S. Valsecchi, Suspect screening of wastewaters to trace anti-COVID-19 drugs: Potential adverse effects on aquatic environment, *Sci. Total Environ.*, 2022, **824**, 153756.
66. P. Kairigo, E. Ngumba, L.-R. Sundberg, A. Gachanja and T. Tuhkanen, Occurrence of antibiotics and risk of antibiotic resistance evolution in selected Kenyan wastewaters, surface waters and sediments, *Sci. Total Environ.*, 2020, **720**, 137580.
67. F. J. Kandie, M. Krauss, L.-M. Beckers, R. Massei, U. Fillinger, J. Becker, M. Liess, B. Torto and W. Brack, Occurrence and risk assessment of organic micropollutants in freshwater systems within the Lake Victoria South Basin, Kenya, *Sci. Total Environ.*, 2020, **714**, 136748.
68. N. Park and J. Jeon, Emerging pharmaceuticals and industrial chemicals in Nakdong River, Korea: Identification, quantitative monitoring, and prioritization, *Chemosphere*, 2021, **263**, 128014.
69. S. Y. Wee, A. Z. Aris, F. M. Yusoff and S. M. Praveena, Occurrence and risk assessment of multiclass endocrine disrupting compounds in an urban tropical river and a proposed risk management and monitoring framework, *Sci. Total Environ.*, 2019, **671**, 431-442.
70. N. A. H. Ismail, S. Y. Wee, N. H. Kamarulzaman and A. Z. Aris, Quantification of multi-classes of endocrine-disrupting compounds in estuarine water, *Environ. Pollut.*, 2019, **249**, 1019-1028.
71. J. A. Rivera-Jaimes, C. Postigo, R. M. Melgoza-Alemán, J. Aceña, D. Barceló and M. L. de Alda, Study of pharmaceuticals in surface and wastewater from Cuernavaca, Morelos, Mexico: occurrence and environmental risk assessment, *Sci. Total Environ.*, 2018, **613**, 1263-1274.
72. S. Chafi, A. Azzouz and E. Ballesteros, Occurrence and distribution of endocrine disrupting chemicals and pharmaceuticals in the river Bouregreg (Rabat, Morocco), *Chemosphere*, 2022, **287**, 132202.
73. M. J. Bernot, R. J. Bernot and C. D. Matthaei, Emerging organic contaminants (EOCs) in freshwaters in Dunedin, New Zealand, *New Zeal. J. Mar. Fresh.*, 2019, **53**, 3-14.
74. E. Inam, N.-A. Offiong, S. Kang, P. Yang and J. Essien, Assessment of the occurrence and risks of emerging organic pollutants (EOPs) in Ikpa River Basin freshwater ecosystem, Niger Delta-Nigeria, *Bull. Environ. Contam. Toxicol.*, 2015, **95**, 624-631.
75. A. J. Ebele, T. Oluseyi, D. S. Drage, S. Harrad and M. A.-E. Abdallah, Occurrence, seasonal variation and human exposure to pharmaceuticals and personal care products in surface water, groundwater and drinking water in Lagos State, Nigeria, *Emerg. Contam.*, 2020, **6**, 124-132.
76. L.-X. Hu, O. J. Olaitan, Z. Li, Y.-Y. Yang, A. Chimezie, A. A. Adepoju-Bello, G.-G. Ying and C.-E. Chen, What is in Nigerian waters? Target and non-target screening analysis for organic chemicals, *Chemosphere*, 2021, **284**, 131546.
77. M. Ashfaq, Y. Li, M. S. U. Rehman, M. Zubair, G. Mustafa, M. F. Nazar, C.-P. Yu and Q. Sun, Occurrence, spatial variation and risk assessment of pharmaceuticals and personal care products in urban wastewater, canal surface water, and their sediments: A case study of Lahore, Pakistan, *Sci. Total Environ.*, 2019, **688**, 653-663.
78. D.-A. Van, T. H. Ngo, T. H. Huynh, N. Nakada, F. Ballesteros and H. Tanaka, Distribution of pharmaceutical and personal care products (PPCPs) in aquatic environment in Hanoi and Metro Manila, *Environ. Monit. Assessment*, 2021, **193**, 847.
79. B. Szymczycha, M. Borecka, A. Biały-Bielńska, G. Siedlewicz and K. Pazdro, Submarine groundwater discharge as a source of pharmaceutical and caffeine residues in coastal ecosystem: Bay of Puck, southern Baltic Sea case study, *Sci. Total Environ.*, 2020, **713**, 136522.

80. K. Styszko, K. Proctor, E. Castrignanò and B. Kasprzyk-Hordern, Occurrence of pharmaceutical residues, personal care products, lifestyle chemicals, illicit drugs and metabolites in wastewater and receiving surface waters of Krakow agglomeration in South Poland, *Sci. Total Environ.*, 2021, **768**, 144360.
81. P. Paíga, L. H. M. L. M. Santos, S. Ramos, S. Jorge, J. G. Silva and C. Delerue-Matos, Presence of pharmaceuticals in the Lis river (Portugal): Sources, fate and seasonal variation, *Sci. Total Environ.*, 2016, **573**, 164-177.
82. M. J. Fernandes, P. Paíga, A. Silva, C. P. Llaguno, M. Carvalho, F. M. Vázquez and C. Delerue-Matos, Antibiotics and antidepressants occurrence in surface waters and sediments collected in the north of Portugal, *Chemosphere*, 2020, **239**, 124729.
83. P. Palma, S. Fialho, A. Lima, M. H. Novais, M. J. Costa, N. Montemurro, S. Pérez and M. L. de Alda, Pharmaceuticals in a Mediterranean Basin: The influence of temporal and hydrological patterns in environmental risk assessment, *Sci. Total Environ.*, 2020, **709**, 136205.
84. V. Homem, M. Llompart, M. Vila, A. R. L. Ribeiro, C. Garcia-Jares, N. Ratola and M. Celeiro, Gone with the flow - Assessment of personal care products in Portuguese rivers, *Chemosphere*, 2022, **293**, 133552.
85. F. L. Chiriac, F. Pirvu and I. Paun, Investigation of endocrine disruptor pollutants and their metabolites along the Romanian Black Sea Coast: Occurrence, distribution and risk assessment, *Environ. Toxicol. Pharm.*, 2021, **86**, 103673.
86. Y. Pico, R. Alvarez-Ruiz, A. H. Alfarhan, M. A. El-Sheikh, H. O. Alshahrani and D. Barceló, Pharmaceuticals, pesticides, personal care products and microplastics contamination assessment of Al-Hassa irrigation network (Saudi Arabia) and its shallow lakes, *Sci. Total Environ.*, 2020, **701**, 135021.
87. L. Niemi, P. Landová, M. Taggart, K. Boyd, Z. Zhang and S. Gibb, Spatiotemporal trends and annual fluxes of pharmaceuticals in a Scottish priority catchment, *Environ. Pollut.*, 2022, **292**, 118295.
88. S. Matongo, G. Birungi, B. Moodley and P. Ndungu, Pharmaceutical residues in water and sediment of Msunduzi River, KwaZulu-Natal, South Africa, *Chemosphere*, 2015, **134**, 133-140.
89. T. P. Wood, C. S. Duvenage and E. Rohwer, The occurrence of anti-retroviral compounds used for HIV treatment in South African surface water, *Environ. Pollut.*, 2015, **199**, 235-243.
90. F. O. Agunbiade and B. Moodley, Occurrence and distribution pattern of acidic pharmaceuticals in surface water, wastewater, and sediment of the Msunduzi River, Kwazulu Natal, South Africa, *Environ. Toxicol. Chem.*, 2016, **35**, 36-46.
91. H.-Y. Kim, I.-S. Lee and J.-E. Oh, Human and veterinary pharmaceuticals in the marine environment including fish farms in Korea, *Sci. Total Environ.*, 2017, **579**, 940-949.
92. V. Mhuka, S. Dube and M. M. Nindi, Occurrence of pharmaceutical and personal care products (PPCPs) in wastewater and receiving waters in South Africa using LC-Orbitrap™ MS, *Emerg. Contam.*, 2020, **6**, 250-258.
93. J. Dehm, S. Singh, M. Ferreira, S. Piovano and J. Fick, Screening of pharmaceuticals in coastal waters of the southern coast of Viti Levu in Fiji, South Pacific, *Chemosphere*, 2021, **276**, 130161.
94. E. Carmona, V. Andreu and Y. Picó, Occurrence of acidic pharmaceuticals and personal care products in Turia River Basin: From waste to drinking water, *Sci. Total Environ.*, 2014, **484**, 53-63.
95. M. Gorga, S. Insa, M. Petrovic and D. Barceló, Occurrence and spatial distribution of EDCs and related compounds in waters and sediments of Iberian rivers, *Sci. Total Environ.*, 2015, **503**, 69-86.
96. A. Ruhí, V. Acuña, D. Barceló, B. Huerta, J.-R. Mor, S. Rodríguez-Mozaz and S. Sabater, Bioaccumulation and trophic magnification of pharmaceuticals and endocrine disruptors in a Mediterranean river food web, *Sci. Total Environ.*, 2016, **540**, 250-259.
97. E. Carmona, V. Andreu and Y. Picó, Multi-residue determination of 47 organic compounds in water, soil, sediment and fish—Turia River as case study, *J. Pharm. Biomed. Anal.*, 2017, **146**, 117-125.
98. A. Ccancapca-Cartagena, Y. Pico, X. Ortiz and E. J. Reiner, Suspect, non-target and target screening of emerging pollutants using data independent acquisition: Assessment of a Mediterranean River basin, *Sci. Total Environ.*, 2019, **687**, 355-368.
99. D. Sadutto, R. Álvarez-Ruiz and Y. Picó, Systematic assessment of extraction of pharmaceuticals and personal care products in water and sediment followed by liquid chromatography-tandem mass spectrometry, *Anal. Bioanal. Chem.*, 2020, **412**, 113-127.
100. D. Sadutto, V. Andreu, T. Ilo, J. Akkanen and Y. Picó, Pharmaceuticals and personal care products in a Mediterranean coastal wetland: Impact of anthropogenic and spatial factors and environmental risk assessment, *Environ. Pollut.*, 2021, **271**, 116353.
101. O. Solaun, J. G. Rodríguez, I. Menchaca, E. López-García, E. Martínez, B. Zonja, C. Postigo, M. López de Alda, D. Barceló, Á. Borja, A. Manzanos and J. Larreta, Contaminants of emerging concern in the Basque coast (N Spain): Occurrence and risk assessment for a better monitoring and management decisions, *Sci. Total Environ.*, 2021, **765**, 142765.

102. K. S. Guruge, P. Goswami, R. Tanoue, K. Nomiya, R. G. S. Wijesekara and T. S. Dharmaratne, First nationwide investigation and environmental risk assessment of 72 pharmaceuticals and personal care products from Sri Lankan surface waterways, *Sci. Total Environ.*, 2019, **690**, 683-695.
103. O. Golovko, A.-L. Rehrl, S. Köhler and L. Ahrens, Organic micropollutants in water and sediment from Lake Mälaren, Sweden, *Chemosphere*, 2020, **258**, 127293.
104. D. Malnes, L. Ahrens, S. Köhler, M. Forsberg and O. Golovko, Occurrence and mass flows of contaminants of emerging concern (CECs) in Sweden's three largest lakes and associated rivers, *Chemosphere*, 2022, **294**, 133825.
105. N. E. Korkmaz, B. Savun-Hekimoğlu, A. Aksu, S. Burak and N. B. Caglar, Occurrence, sources and environmental risk assessment of pharmaceuticals in the Sea of Marmara, Turkey, *Sci. Total Environ.*, 2022, **819**, 152996.
106. S. Dalahmeh, E. Björnberg, A.-K. Elenström, C. B. Niwagaba and A. J. Komakech, Pharmaceutical pollution of water resources in Nakivubo wetlands and Lake Victoria, Kampala, Uganda, *Sci. Total Environ.*, 2020, **710**, 136347.
107. F. Nantaba, J. Wasswa, H. Kylin, W.-U. Palm, H. Bouwman and K. Kümmeler, Occurrence, distribution, and ecotoxicological risk assessment of selected pharmaceutical compounds in water from Lake Victoria, Uganda, *Chemosphere*, 2020, **239**, 124642.
108. L. Griffero, J. Alcantara-Duran, C. Alonso, L. Rodriguez-Gallego, D. Moreno-Gonzalez, J. F. Garcia-Reyes, A. Molina-Diaz and A. Perez-Parada, Basin-scale monitoring and risk assessment of emerging contaminants in South American Atlantic coastal lagoons, *Sci. Total Environ.*, 2019, **697**, 134058.
109. D. J. Fairbairn, M. E. Karpuzcu, W. A. Arnold, B. L. Barber, E. F. Kaufenberg, W. C. Koskinen, P. J. Novak, P. J. Rice and D. L. Swackhamer, Sediment–water distribution of contaminants of emerging concern in a mixed use watershed, *Sci. Total Environ.*, 2015, **505**, 896-904.
110. S. Panthi, A. R. Sapkota, G. Raspanti, S. M. Allard, A. Bui, H. A. Craddock, R. Murray, L. Zhu, C. East and E. Handy, Pharmaceuticals, herbicides, and disinfectants in agricultural water sources, *Environ. Res.*, 2019, **174**, 1-8.
111. J. R. Deere, S. Moore, M. Ferrey, M. D. Jankowski, A. Primus, M. Convertino, J. L. Servadio, N. B. Phelps, M. C. Hamilton and Y. Chenaux-Ibrahim, Occurrence of contaminants of emerging concern in aquatic ecosystems utilized by Minnesota tribal communities, *Sci. Total Environ.*, 2020, **724**, 138057.
112. P. Sharma and D. Hanigan, Evidence of low levels of trace organic contaminants in terminal lakes, *Chemosphere*, 2021, **285**, 131408.
113. L. D. Brunelle, I. J. Huang, L. F. Angeles, L. S. Running, H. I. Sirotkin, A. E. McElroy and D. S. Aga, Comprehensive assessment of chemical residues in surface and wastewater using passive sampling, chemical, biological, and fish behavioral assays, *Sci. Total Environ.*, 2022, **828**, 154176.
114. A. T. Kullberg, G. L. Carlson, S. M. Haver and W. G. McDowell, Contamination of Maine lakes by pharmaceuticals and personal care products, *J. Environ. Stud. Sci.*, 2022, **12**, 248-259.
115. T. H. Ngo, D.-A. Van, H. L. Tran, N. Nakada, H. Tanaka and T. H. Huynh, Occurrence of pharmaceutical and personal care products in Cau River, Vietnam, *Environ. Sci. Pollut. Res.*, 2021, **28**, 12082-12091.
116. M. Beretta, V. Britto, T. M. Tavares, S. M. T. da Silva and A. L. Pletsch, Occurrence of pharmaceutical and personal care products (PPCPs) in marine sediments in the Todos os Santos Bay and the north coast of Salvador, Bahia, Brazil, *J. Soil Sediment*, 2014, **14**, 1278-1286.
117. D. N. R. Sousa, G. M. Grosseli, A. A. Mozeto, R. L. Carneiro and P. S. Fadini, Ultrasound-assisted extraction method for the simultaneous determination of emerging contaminants in freshwater sediments, *J. Sep. Sci.*, 2015, **38**, 3454-3460.
118. A. Mizukawa, D. Molins-Delgado, J. C. R. de Azevedo, C. V. S. Fernandes, S. Díaz-Cruz and D. Barceló, Sediments as a sink for UV filters and benzotriazoles: the case study of Upper Iguaçu watershed, Curitiba (Brazil), *Environ. Sci. Pollut. Res.*, 2017, **24**, 18284-18294.
119. D. M. Santos, L. Buruaem, R. M. Gonçalves, M. Williams, D. M. Abessa, R. Kookana and M. R. R. de Marchi, Multiresidue determination and predicted risk assessment of contaminants of emerging concern in marine sediments from the vicinities of submarine sewage outfalls, *Mar. Pollut. Bull.*, 2018, **129**, 299-307.
120. J. Xie, Y. Liu, Y. Wu, L. Li, J. Fang and X. Lu, Occurrence, distribution and risk of pharmaceutical and personal care products in the Haihe River sediments, China, *Chemosphere*, 2022, **302**, 134874.
121. C. I. Nannou, V. I. Boti and T. A. Albanis, A modified QuEChERS approach for the analysis of pharmaceuticals in sediments by LC-Orbitrap HRMS, *Anal. Bioanal. Chem.*, 2019, **411**, 1383-1396.
122. P. Chakraborty, M. Mukhopadhyay, S. Sampath, B. R. Ramaswamy, A. Katsoyiannis, A. Cincinelli and D. Snow, Organic micropollutants in the surface riverine sediment along the lower stretch of the transboundary river Ganga: Occurrences, sources and ecological risk assessment, *Environ. Pollut.*, 2019, **249**, 1071-1080.
123. G. Mascolo, S. Murgolo, F. Stefani and L. Viganò, Target and suspect contaminants of emerging concern in the Po River Delta lagoons, *Estuar. Coast. Shelf. Sci.*, 2019, **230**, 106424.
124. A. Díaz and A. Peña-Alvarez, A simple method for the simultaneous determination of pharmaceuticals and personal care products in river sediment by ultrasound-assisted extraction followed by solid-phase microextraction coupled with gas chromatography-mass spectrometry, *J. Chromatogr. Sci.*, 2017, **55**, 946-953.

125. M. Biel-Maeso, C. Corada-Fernández and P. A. Lara-Martín, Determining the distribution of pharmaceutically active compounds (PhACs) in soils and sediments by pressurized hot water extraction (PHWE), *Chemosphere*, 2017, **185**, 1001-1010.
126. G. C. C. Yang, C.-L. Wang and Y.-H. Chiu, Occurrence and distribution of phthalate esters and pharmaceuticals in Taiwan river sediments, *J. Soil Sediment*, 2015, **15**, 198-210.
127. D. Molins-Delgado, R. Muñoz, S. Nogueira, M. B. Alonso, J. P. Torres, O. Malm, R. L. Zioli, R. A. Hauser-Davis, E. Eljarrat and D. Barceló, Occurrence of organic UV filters and metabolites in lebranché mullet (*Mugil liza*) from Brazil, *Sci. Total Environ.*, 2018, **618**, 451-459.
128. M. F. Martins, P. G. Costa and A. Bianchini, Contaminant screening and tissue distribution in the critically endangered Brazilian guitarfish *Pseudobatos horkelii*, *Environ. Pollut.*, 2020, **265**, 114923.
129. F. V. Mello, S. C. Cunha, F. H. S. Fogaça, M. B. Alonso, J. P. M. Torres and J. O. Fernandes, Occurrence of pharmaceuticals in seafood from two Brazilian coastal areas: Implication for human risk assessment, *Sci. Total Environ.*, 2022, **803**, 149744.
130. D. Muir, D. Simmons, X. Wang, T. Peart, M. Villegas, J. Miller and J. Sherry, Bioaccumulation of pharmaceuticals and personal care product chemicals in fish exposed to wastewater effluent in an urban wetland, *Scientific Reports*, 2017, **7**, 16999.
131. H. Chen, S. Liu, X.-R. Xu, S.-S. Liu, G.-J. Zhou, K.-F. Sun, J.-L. Zhao and G.-G. Ying, Antibiotics in typical marine aquaculture farms surrounding Hailing Island, South China: occurrence, bioaccumulation and human dietary exposure, *Mar. Pollut. Bull.*, 2015, **90**, 181-187.
132. Z. Xie, G. Lu, J. Liu, Z. Yan, B. Ma, Z. Zhang and W. Chen, Occurrence, bioaccumulation, and trophic magnification of pharmaceutically active compounds in Taihu Lake, China, *Chemosphere*, 2015, **138**, 140-147.
133. Z. Sang and K. S.-Y. Leung, Environmental occurrence and ecological risk assessment of organic UV filters in marine organisms from Hong Kong coastal waters, *Sci. Total Environ.*, 2016, **566**, 489-498.
134. L. Xia, L. Zheng and J. L. Zhou, Effects of ibuprofen, diclofenac and paracetamol on hatch and motor behavior in developing zebrafish (*Danio rerio*), *Chemosphere*, 2017, **182**, 416-425.
135. S. Liu, T.-G. Bekele, H. Zhao, X. Cai and J. Chen, Bioaccumulation and tissue distribution of antibiotics in wild marine fish from Laizhou Bay, North China, *Sci. Total Environ.*, 2018, **631**, 1398-1405.
136. S. Lu, N. Wang, S. Ma, X. Hu, L. Kang and Y. Yu, Parabens and triclosan in shellfish from Shenzhen coastal waters: Bioindication of pollution and human health risks, *Environ. Pollut.*, 2019, **246**, 257-263.
137. Z. Tang, F. Zhong, J. Cheng, Z. Nie, X. Han, Y. Han and Y. Yang, Concentrations and tissue-specific distributions of organic ultraviolet absorbents in wild fish from a large subtropical lake in China, *Sci. Total Environ.*, 2019, **647**, 1305-1313.
138. T. H. Miller, G. L. McEneff, R. J. Brown, S. F. Owen, N. R. Bury and L. P. Barron, Pharmaceuticals in the freshwater invertebrate, *Gammarus pulex*, determined using pulverised liquid extraction, solid phase extraction and liquid chromatography-tandem mass spectrometry, *Sci. Total Environ.*, 2015, **511**, 153-160.
139. M. Picot-Groz, H. Fenet, M. J. M. Bueno, D. Rosain and E. Gomez, Diurnal variations in personal care products in seawater and mussels at three Mediterranean coastal sites, *Environ. Sci. Pollut. Res.*, 2018, **25**, 9051-9059.
140. C. Miossec, T. Mille, L. Lanceleur and M. Monperrus, Simultaneous determination of 42 pharmaceuticals in seafood samples by solvent extraction coupled to liquid chromatography-tandem mass spectrometry, *Food Chem.*, 2020, **322**, 126765.
141. D. Wolecki, M. Caban, K. Pazdro, E. Mulkiewicz, P. Stepnowski and J. Kumirska, Simultaneous determination of non-steroidal anti-inflammatory drugs and natural estrogens in the mussels *Mytilus edulis trossulus*, *Talanta*, 2019, **200**, 316-323.
142. J. M. Peña-Herrera, N. Montemurro, D. Barceló and S. Pérez, Development and validation of an analytical method for determination of pharmaceuticals in fish muscle based on QuEChERS extraction and SWATH acquisition using LC-QTOF-MS/MS system, *Talanta*, 2019, **199**, 370-379.
143. R. Tanoue, K. Nomiyama, H. Nakamura, T. Hayashi, J.-W. Kim, T. Isobe, R. Shinohara and S. Tanabe, Simultaneous determination of polar pharmaceuticals and personal care products in biological organs and tissues, *J. Chromatog. A*, 2014, **1355**, 193-205.
144. A. Serra-Compte, D. Álvarez-Muñoz, S. Rodríguez-Mozaz and D. Barceló, Multi-residue method for the determination of antibiotics and some of their metabolites in seafood, *Food Chem. Technol.*, 2017, **104**, 3-13.
145. D. Álvarez-Muñoz, S. Rodríguez-Mozaz, A. Maulvault, A. Tediosi, M. Fernández-Tejedor, F. Van den Heuvel, M. Kotterman, A. Marques and D. Barceló, Occurrence of pharmaceuticals and endocrine disrupting compounds in macroalgae, bivalves, and fish from coastal areas in Europe, *Environ. Res.*, 2015, **143**, 56-64.
146. A. M. Ali, H. T. Rønning, L. K. Sydnes, W. M. Alarif, R. Kallenborn and S. Al-Lihabi, Detection of PPCPs in marine organisms from contaminated coastal waters of the Saudi Red Sea, *Sci. Total Environ.*, 2018, **621**, 654-662.

147. C. Y. Ojemaye and L. Petrik, Occurrences, levels and risk assessment studies of emerging pollutants (pharmaceuticals, perfluoroalkyl and endocrine disrupting compounds) in fish samples from Kalk Bay harbour, South Africa, *Environ. Pollut.*, 2019, **252**, 562-572.
148. P. Gago-Ferrero, M. S. Díaz-Cruz and D. Barceló, UV filters bioaccumulation in fish from Iberian river basins, *Sci. Total Environ.*, 2015, **518**, 518-525.
149. R. Moreno-González, S. Rodríguez-Mozaz, B. Huerta, D. Barceló and V. León, Do pharmaceuticals bioaccumulate in marine molluscs and fish from a coastal lagoon?, *Environ. Res.*, 2016, **146**, 282-298.
150. D. Álvarez-Muñoz, M. Rambla-Alegre, N. Carrasco, M. L. de Alda and D. Barceló, Fast analysis of relevant contaminants mixture in commercial shellfish, *Talanta*, 2019, **205**, 119884.
151. Y. Pico, V. Belenguer, C. Corcellas, M. S. Díaz-Cruz, E. Eljarrat, M. Farré, P. Gago-Ferrero, B. Huerta, A. Navarro-Ortega and M. Petrovic, Contaminants of emerging concern in freshwater fish from four Spanish Rivers, *Sci. Total Environ.*, 2019, **659**, 1186-1198.
152. M. Rojo, D. Álvarez-Muñoz, A. Domanico, R. Foti, S. Rodriguez-Mozaz, D. Barceló and P. Carriquiriborde, Human pharmaceuticals in three major fish species from the Uruguay River (South America) with different feeding habits, *Environ. Pollut.*, 2019, **252**, 146-154.
153. N. G. Dodder, K. A. Maruya, P. L. Ferguson, R. Grace, S. Klosterhaus, M. J. La Guardia, G. G. Lauenstein and J. Ramirez, Occurrence of contaminants of emerging concern in mussels (*Mytilus* spp.) along the California coast and the influence of land use, storm water discharge, and treated wastewater effluent, *Mar. Pollut. Bull.*, 2014, **81**, 340-346.
154. H. Y. Done and R. U. Halden, Reconnaissance of 47 antibiotics and associated microbial risks in seafood sold in the United States, *J. Hazard. Mater.*, 2015, **282**, 10-17.
155. B. Du, S. P. Haddad, W. C. Scott, C. K. Chambliss and B. W. Brooks, Pharmaceutical bioaccumulation by periphyton and snails in an effluent-dependent stream during an extreme drought, *Chemosphere*, 2015, **119**, 927-934.
156. B. Du, S. P. Haddad, A. Luek, W. C. Scott, G. N. Saari, S. R. Burkett, C. S. Breed, M. Kelly, L. Broach and J. B. Rasmussen, Bioaccumulation of human pharmaceuticals in fish across habitats of a tidally influenced urban bayou, *Environ. Toxicol. Chem.*, 2016, **35**, 966-974.
157. P. Arnnok, R. R. Singh, R. Burakham, A. Pérez-Fuentetaja and D. S. Aga, Selective uptake and bioaccumulation of antidepressants in fish from effluent-impacted Niagara River, *Environ. Sci. Technol.*, 2017, **51**, 10652-10662.
158. K. He, A. Timm and L. Blaney, Simultaneous determination of UV-filters and estrogens in aquatic invertebrates by modified quick, easy, cheap, effective, rugged, and safe extraction and liquid chromatography tandem mass spectrometry, *J. Chromatogr. A*, 2017, **1509**, 91-101.
159. S. P. Haddad, A. Luek, W. C. Scott, G. N. Saari, S. R. Burkett, L. A. Kristofco, J. Corrales, J. B. Rasmussen, C. K. Chambliss and M. Luers, Spatio-temporal bioaccumulation and trophic transfer of ionizable pharmaceuticals in a semi-arid urban river influenced by snowmelt, *J. Hazard. Mater.*, 2018, **359**, 231-240.
160. B. Huerta, S. Rodriguez-Mozaz, J. Lazorchak, D. Barcelo, A. Batt, J. Wathen and L. Stahl, Presence of pharmaceuticals in fish collected from urban rivers in the U.S. EPA 2008–2009 National Rivers and Streams Assessment, *Sci. Total Environ.*, 2018, **634**, 542-549.
161. X. Bai and K. Acharya, Uptake of endocrine-disrupting chemicals by quagga mussels (*Dreissena bugensis*) in an urban-impacted aquatic ecosystem, *Environ. Sci. Pollut. Res.*, 2019, **26**, 250-258.