Supplementary Information

Table SI-1 Methods for the determination of mefenamic acid

Method / reagents / conditions	Object	Linearity	Detection limit	Ref
Spectrophotometric methods				
Copper(II) ammine sulphate; extragent – chloroform; pH 9; λ=430 nm	Pure form and pharmaceuticals	6-48 µg/ml	–	[18]
$FeCl_3$ in metanol solution; pH 2.7; λ=495 nm	Pharmaceuticals	96- 579 µg /ml		[19]
Ce(III) reaction with arsenazo (III) reagent; pH 3; λ=654 nm	Pharmaceuticals	1 to 10 µg/25 ml		[20]
p-chloranilic acid in acetone soln; pH 8.2; λ=520 nm; N-bromosuccinamide in methanol soln; λ=362 nm; 3-methylbenzo-thiazolin-2-one hydrazone in methanol soln in the presence of $FeCl_3$; λ=602 nm	Pure form and pharmaceuticals	10-300 µg/ml 5-70 µg/ml 1-6 µg/ml	2.50 µg/ml 0.51 µg/ml 0.06 µg/ml	[21]
Mef in hydrocloric acid in methanol; λ=279, 351 nm	Pharmaceuticals	–	–	[22]
Copper (II) complex with 5,7,7,12,14,14-hexamethyl -1,4,8,11-tetraazacyclo tetradeca-4,11-diene; extragent – chloroform; pH 9; λ=545 nm	Pharmaceuticals	–	0.1 mg/ml	[23]
Methylene violet; extragent – chloroform; pH 7.6; λ=540 nm	Pharmaceuticals	1-8 µg/ml	–	[24]
First derivative of the ratio spectra solution Mef in NaOH / methanol (1:9)	Synthetic mixtures, pharmaceuticals	2-10µg/ml	1.15 µg/ml	[25]
p-dimethyl-aminocinnamaldhyde in acidified absolute methanol medium; λ = 665 nm	pharmaceutical formulations	1-8 µg/ml		[26]
Astrafloxin FF / pH 9–11/ extragent : isooctane-dichloroethane 64 : 36 (v/v) / λ=533	pharmaceutical formulations	2.0-21.0 µg/mL	0.72 µg/mL	[27]
Chromatographic methods				
LC; UV detection; λ = 278 nm; mobile phase: methanol-glacial acetic acid-water (85:2:15)	Pharmaceuticals	25 – 150 µg/ml		[28]
HPLC; UV detection; λ=254nm; pH 5.0; mobile phase: acetonitrile-ammonium buffer-	Pharmaceuticals			[29]

tetrahydrofuran (23:20:7)				
GLC; flame ionisation detector, $t_{detect.}$ = 290 ˚C; mobile phase: N,N-dimethylacetamid-tetramethyl ammonium hydroxide-1-iodobutane (80:10:20)	Human serum	2 – 50 µg in 2 ml serum	1 mg/l using 2 ml serum	[47]
HPLC; UV detection; λ=280 nm, pH 2.6; mobile phase: phosphoric acid-acetonitrile (40:60)	Plasma	0.1 – 10 µg/ml	0.08 µg/ml for 50 ml plasma	[48]
HPLC; UV detection; λ=280nm; pH 3; mobile phase: acetonitrile-water (50:50)	Human serum	25– 2000 ng/ml	15ng/ml	[49]
HPLC; UV detection; λ=254 nm; mobile phase: acetonitrile- phosphate buffer (pH 3.5), methanol and tetrahydrofuran.	Human plasma	11.5–75 ng/ml	-	[50]
LC-MS/MS; λ = 210nm; mobile phase: potassium phosphate buffer (pH 4.0)-acetonitrile (30:70)	River water	0.3–12 ng/l	0.15ng/l	[52]
Electrochemical methods				
Solid-contact voltamperometric graphite-paste sensor based on $La(OH)_3$; pH 5.8	Pharmaceuticals	2×10^{-11} – 4×10^{-9} M	6.1×10^{-12} M	[30]
Solid-contact voltamperometric graphite-paste sensor based on metal complex with a Schiff base Fe (III)-4-bromo-2-{[2-(2-pyridin-2-yl-ethylsulfanyl)-ethylimino]methyl}phenol (putBrsal); pH 3.5	Pharmaceuticals	0.02 – 150 µM/l	0.02 µM/l	[31]