

Index

a

- accuracy criterion 55
- acetaminophen *see* paracetamol
- acetylcarnitine 66, 124
- acetylcysteine 68, 124
- acyclovir 72, 124
- aetheric oil 61
- aglycon 62
- allopurinol 124
- ambroxol 124
- amiloride 124
- amino acid derivatization 50
- amoxicillin 124
- amperometric detector 16
- amphetamine 124
- ampicillin 124
- analysis
 - effects influencing the correctness of analytical results 54
 - of peptides 86
 - planning of 53 f
- analyte
 - amphoteric 67, 98
 - benzodiazepine derivatives 78
 - concentration 10, 14
 - determination in tissues 10
 - hydrophilic 93, 99, 105
 - light-sensitive 59
 - oxidation-sensitive 60, 70
 - peptidic 85
 - pH-dependent 59
 - properties of case substances 124 f
 - purine derivatives 72
 - solubility of 4, 20 f
 - stability of 56, 59
 - structure of 4
 - tetracycline derivatives 97
 - thiol derivative 68
 - with carboxy group 67, 79, 105

- with functional groups 18
- with lipophilic basic framework 18
- animal feed
 - valnemulin in 115
- atmospheric pressure photoionization (APPI) 90 f
- Aussalzeffekt 75

b

- bacitracin 124
- bendroflumethiazide 125
- benzobromarone 125
- benzoic acid 125
- bezafibrate 125
- budesonide 125
- butorphanol 125

c

- caffeine 61, 74, 125
- calibration 55
- canrenone 125
- captopril 19, 125
- carbamazepine 126
- carryover effect 38, 84
- carvedilol 126
- case study
 - in plasma 2, 66 ff
 - in tissue 101, 108, 115
 - in urine 72, 92
 - properties of case substances 124 f
- chemical derivatization 18, 49, 70, 115, 119
- chloroform/methanol as solvent 29
- chlorthalidone 126
- ciclesonide 126
- cimetidine 126
- cinnarizine 126
- clarithromycin 126
- codeine 126
- compliance 46

concentration range 55
 coulometric detector 16
 criteria of acceptance 55

d

degasser 38
 degradation product
 – practical aspects concerning 59
 detection 45 f
 – in the “clinical area” 46
 – in the bioanalytical area 46
 – in the pharmaceutical area 45 f
 – of cholesterol derivatives 17
 – of sphingolipids 17
 detection enhancement 49
 detector 13, 15 f
 – choice of 21
 – for gradient elution 36
 dextrophan 126
 diazepam 78, 126
 diclofenac 79, 127
 dihydralazine 82, 127
 dilution 23
 dilution effect 46
 diphenhydramine 127
 dipyrindamole 127
 direct injection 28
 dismembrator 10, 109
 doxorubicin 127
 doxycycline 24, 127
 drug 72
 – concentration in plasma 2
 – elimination half-life 2
 – protein binding of 5
 duramycin (Moli 1901) 85, 127

e

ϵ value 13, 15, 21
 electrochemical detector (ECD) 16, 36
 electrochemical oxidation 13
 electrospray ionization (ESI) 86
 elimination half-life 14, 79, 124 f
 ELSD *see* mass detector 17
 enantiomeric separation 43, 94
 endogeneous substance 66, 68, 118
 enzymatic cleavage 112
 erythromycin 127
 ESI *see* electrospray ionization
 estrogen derivatives, determination of 49 f
 ethinylestradiol (EE2) 49 f
 ethyl acetate as solvent 29
 external standardization 63
 extraction 25 f

f

FDA guideline 13
 – realization of the 55
 fibrin clot 6
 first-pass effect 46
 fluorescence 13
 fluorescence detection 5, 51, 73
 fluorescence detector 21, 93
 fluorimetric derivatization 52
 fluram 50
 fluticasone propionate 89, 127
 Folch extraction 29
 formoterol 127
 furosemide 128

g

glibenclamide 128
 glycoside 62
 gradient elution 36

h

hexane/heptane as solvent 29
 HPLC column 39 f
 – bare-silica column 42
 – carbon column 43
 – CN column 42
 – modified cyclodextrine column 44
 – NH_2 column 42
 HPLC pump 36
 HPLC separation 35 ff, 44
 HPLC-MS/MS analysis 11, 91, 102
 HPLC-UV analysis 8 f
 hydrochlorothiazide 128
 hydrophilicity
 – of metabolites versus parent drug 61
 hydroxytriamterene sulfate 92

i

ibuprofen 19, 128
 – determination of, in plasma 2 ff
 – enantiomeric separation of 94
 – UV-spectrum of 3
 indomethazin 128
 injection loop 38
 injection solution 25, 27
 injection volume
 – deviations of the 39
 injector 38
 injector-rinsing solution 38
 internal standard 63 f, 106
 – versus external standard 63 f
 ion exchanger 43
 ion trap MS/MS instrument 17

ion-exchange phase 33
 ion-pairing chromatography 9
 ion-pairing substance 36
 isocratic separation system 36
 isopropyl ether as solvent 29
 isosorbide-5-mononitrate 128
 isotopic-labelled internal standard 46, 63
 itraconazole 128

k

ketoconazole 128

l

lansoprazole 128
 levodopa 129
 limit of detection (LOD) 13 f, 21, 45
 limit of determination (LLOQ) 14, 17, 45
 – criteria of acceptance for 55
 lipophilicity 4, 8
 liquid-liquid extraction (LLE) 4, 19, 26 ff, 80,
 90, 97, 115
 – criteria for solvents for 28 f
 – of phenols 113
 liquid-solid extraction *see* solid-phase
 extraction (SPE)
 long-term stability 56
 long-time storage 60
 lornoxicam 129

m

mass detector (ELSD) 17
 mass spectrometer 17
 mass-spectrometric detection 8, 17, 24
 matrix effect 32, 46, 56
 medication dosage 2
 mefenamic acid 129
 menthol 61
 metabolite 61 f
 – hydrophilicity of 61
 – of caffeine 75 f
 – of diazepam 79
 – protein binding of 5
 metformin 129
 5-methoxypsoralen 129
 8-methoxypsoralen 129
 metoprolol 129
 metronidazole 129
 midazolam 129
 minocycline 96, 130
 mixed mode phase 32 f
 montelukast 130
 MS detector 22
 MS/MS analysis 11, 46, 57, 61, 90, 108
 – standards for 64

multimetabolite 62
 multiple reaction monitoring (MRM) 17, 86

n

nabilone 130
 neomycin 130
 nicorandil 130
 nifedipine 59, 130
 nitrofurantoin 130
 nonsteroidal antirheumatic (NSAR) 2
 norfloxacin 98, 130
 normal phase 42
 N-oxide 61
 NSAR *see* nonsteroidal antirheumatic

o

omeprazole 130
 ortho-phthalaldehyde (OPA) 50
 oxazepam 130
 oxidation, prevention of 70

p

paclitaxel 11, 130
 – determination of, in tissue 10 ff
 pantoprazole 131
 paracetamol 104, 131
 paroxetine 131
 penicillin V 131
 pentoxifylline 131
 peppermint oil 61
 peptide degradation 59
 pharmacokinetic profile 45
 phase with reversed polarity 39 f
 phase-1 metabolite 61
 phase-2 metabolite 61
 phenobarbital 131
 phentermine 19
 phenylalanine 20
 phenylbutazone 131
 phenylsalicylate 19
 phenytoin 131
 phytopharmakon 62
 pimelic acid 106, 132
 pirenzepine 132
 piroxicam 132
 planning of analyses 13 ff
 – formulation of analytical targets 2, 7
 – preliminary questions 13
 plasma 6
 – acetylcarnitine in 66
 – acetylcysteine in 68
 – acyclovir in 72
 – caffeine in 74

- concentration of endogenous substances in 5
 - diazepam in 78
 - diclofenac in 79
 - dihydralazine in 82
 - duramycin (Moli 1901) in 85
 - fluticasone propionate in 89
 - hydroxytramterene sulfate in 92
 - ibuprofen in 2 ff
 - minocycline in 96
 - norfloxacin in 98
 - paclitaxel in 101
 - paracetamol in 104
 - pH changes of 59
 - pimelic acid in 106
 - precleaning of 4 f
 - 8-prenylnaringenin in 108
 - silibinin in 110
 - thiols in 70
 - traitemerene in 92
 - valnemulin in 115
 - vitamin B1 118
 - postcolumn derivatization 82, 111, 119
 - pracetam 132
 - precision criterion 55 f
 - precolumn derivatization 49 f
 - 8-prenylnaringenin 108, 132
 - product stability
 - practical aspects concerning 59
 - propafenone 132
 - propranolol 132
 - propyphenazone 132
 - protein binding 5, 24, 31, 124 f
 - protein precipitation 23
 - with acetonitrile 24 f, 76, 79, 87
 - with acid 24
 - with methanol 25
 - pseudo-MRM 86
- r**
- recovery 56
 - detergents for 117
 - refraction index detector 16
 - reproducibility of analytical results 55
 - reversed phase separation (RP separation) 4, 25, 35
 - buffer for 41
 - mobile phases for 40 ff
 - reversed polarity 31
 - reversed-phase material for SPE 31 f
 - roflumilast 132
 - reversed phase column 40
 - rutine 20
- s**
- salbutamol 132
 - salicylic acid 133
 - salmeterol 133
 - sample clean-up 67
 - sample preparation 9, 11, 23 ff
 - of tissue 10
 - precolumn clean up 32
 - reuptake after evaporation 27
 - sample storage 60
 - selectivity 9, 17, 56
 - serum *see also* plasma 6
 - silibinin 110, 133
 - silymarin *see* silibinin
 - SIM measurement 17
 - solid-phase extraction (SPE) 5, 18, 30, 80
 - comparison with LLE 30
 - solubility
 - of the analyte 4, 8, 13, 20 f
 - solvent
 - for liquid-liquid extraction 28 f
 - solvent solubility 28
 - solvent toxicity 28
 - solvent volatility 28
 - SPE *see* solid-phase extraction
 - stability of metabolites 61
 - stability of the analyte 56
 - factors influencing the 59
 - standard 55
 - structure
 - influence on molecule behavior 18 f
 - of the analyte 13, 17 f
- t**
- temazepam 133
 - tenside 11
 - theobromine 76
 - theophylline 76
 - theophylline 133
 - therapy control 45 f
 - thiol degradation 59, 70
 - tissue
 - homogenization 10
 - paclitaxel in 10 ff
 - 8-prenylnaringenin in 108
 - sample preparation 10
 - valnemulin in 115
 - tolperisone 133
 - total thiamine *see* vitamin B1
 - triamterene 92
 - tramadol 133
 - triamterene 133

triple-quad MS/MS instrument 17
tryptophan 7 ff, 133

u

ultraperformance liquid chromatography
(UPLC) 37

Ultraturrax 10

UPLC *see* ultraperformance liquid
chromatography

urine

- acyclovir in 72
- hydroxytramterene sulfate in 92
- norfloxacin in 98
- paclitaxel in 101
- pimelic acid in 106
- triamterene in 92
- tryptophane in 7 ff

UV detector 15, 21, 36
UV-detection 3, 24, 46, 73, 86

UV-spectrum

- of ibuprofen 3
- of tryptophan 7 ff

v

validation concept 53

validation plan 55

validation report 56

valnemulin 115, 133

verapamil 134

vitamin B1 118, 134

vitamin B2 134

vitamin B6 134

vitamin E 134

