

Compounds in Training set	% dose excreted into bile	Administration Route	Population Studied	Sample Collection Method	Collection Interval	Analytical Method	Molecular Weight	Charge Status	Substrate of Efflux transporter	Reference
Penicillins:										
ampicillin	0.1	i.v.	5 patients	T-tube	12 hr	Bioassay	349	zwitter		Brogard JM, et.al. Chemotherapy. 1977;23(4):213-26
apalcillin	12.2	i.v.	10 patients	T-tube	12 hr	Bioassay	521.54	zwitter		Brogard JM, et.al. Antimicrob Agents Chemother. 1984 Sep;26(3):428-30
azlocillin	5.3 ± 2.8 3.4 ± 2.8	i.v. infusion	3 patients 5 healthy volunteers	T-tube duodenal aspiration	8 hr	HPLC HPLC	461.47	anion		Gundert-Remy U, et.al. Eur J Clin Pharmacol. 1982;22(5):435-9 Gundert-Remy U, et.al. Br J Clin Pharmacol. 1982 Jun;13(6):795-801.
carbenicillin	0.11	i.v.	10 normal subjects	duodenal intubation	4 - 5 hr	Bioassay	378.4	anion		Pinget M, et.al. J Antimicrob Chemother. 1976 Jun;2(2):195-201
metampicillin	8.3 5.8	i.v. i.v.	5 patients 10 normal subjects	T-tube duodenal intubation	12 hr 4 - 5 hr	Bioassay	361.42	anion		Pinget M, et.al. J Antimicrob Chemother. 1976 Jun;2(2):195-201
mezlocillin	29.9 ± 11.5	infusion	5 healthy volunteers	duodenal aspiration		HPLC	539.6	anion		Gundert-Remy U, et.al. Br J Clin Pharmacol. 1982 Jun;13(6):795-801.
	34.4	infusion	8 Healthy subject	duodenal perfusion	6 hr	HPLC				Hildebrandt R, et.a. Int J Clin Pharmacol Ther. 1995 Jul;33(7):384-7
nafcillin	8	i.v.	1 patient	T-tube	6 - 7 hr	Bioassay	414.47	anion		NUNES HL, et.al. Antimicrobial Agents Chemother (Bethesda). 1964;10:237-49
penicillin G (benzylpenicillin)	0.12 0.1	i.v. i.v.	5 patients 5 normal subjects	T-tube duodenal aspiration			334.39	anion	MRP2	Brogard JM, et.al. Antimicrob Agents Chemother. 1980 Jul;18(1):69-76.
piperacillin	1.1 ± 0.3	short infusion	3 healthy volunteers	duodenal aspiration	6 hr	HPLC	517.55	anion		Ghibellini G, et.al. Br J Clin Pharmacol. 2006 Sep;62(3):304-8
temocillin	2.2	i.v.	6 healthy volunteers	duodenal perfusion	6 hr	Bioassay	414.45	anion		Maudgal DP, et.al. Drugs. 1985;29 Suppl 5:146-50
ticarcillin	0.28 ± 0.08	i.v.	10 patients	T-tube	12 hr	HPLC	384	anion		Brogard JM, et.al. Int J Clin Pharmacol Ther Toxicol. 1989 Mar;27(3):135-44.
Cephalosporines										
cefaclor	0.096	p.o	10 patients	T-tube	12 hr		367.81	zwitter		Brogard JM, et.al. J Antimicrob Chemother. 1987 May;19(5):671-8 % of dose: 0.05; F: ≥ 52% (Goodman Gilman)
cefamandole	0.08 0.07	i.v. i.v.	10 patients 5 normal subjects	T-tube duodenal intubation			462.5	anion		Brogard JM, et.al. Antimicrob Agents Chemother. 1980 Jul;18(1):69-76.
	0.412 ± 0.09	i.v.	7 patients	T-tube	6 hr	Bioassay				Ratzan KR, et.al. Antimicrob Agents Chemother. 1978 Jun;13(6):985-7
cefazolin	0.13 0.15	i.v. i.v.	5 patients 10 normal subjects	T-tube duodenal intubation			454.5	anion		Brogard JM, et.al. Antimicrob Agents Chemother. 1980 Jul;18(1):69-76.
	0.12 ± 0.02	i.v.	7 patients	T-tube	6 hr	Bioassay				Ratzan KR, et.al. Antimicrob Agents Chemother. 1978 Jun;13(6):985-7
cefixime	10.6	p.o	10 patients	T-tube	24 hr	HPLC	453.45	anion		Westphal JF, et.al. Antimicrob Agents Chemother. 1993 Jul;37(7):1488-91 % of dose: 5; F: 47 ± 15 (Goodman and Gilman)

Compounds in Training set	% dose excreted into bile	Administration Route	Population Studied	Sample Collection Method	Collection Interval	Analytical Method	Molecular Weight	Charge Status	Substrate of Efflux transporter	Reference
cefoperazone	11.5 ± 7.1	short infusion	6 patients	T-tube	24 hr	HPLC	645.67	anion	MRP2	Kemmerich B, et.al. J Antimicrob Chemother. 1983 Jul;12(1):27-37.
cefotetan	10.86	i.v.	7 healthy volunteers	duodenal perfusion	7 hr	HPLC	575.62	anion		Lanzini A, et.al. Gut. 1989 Jan;30(1):104-9
cefotiam	1.8	i.v.	10 patients	T-tube			525.63	zwitter		Brogard JM, et.al. J Antimicrob Chemother. 1987 May;19(5):671-8
ceftazidime	0.21 0.05	i.v. i.v.	12 patients 5 normal subjects	T-tube duodenal aspiration	12 hr 4 hr	HPLC	548.59	anion		Brogard JM, et.al. J Antimicrob Chemother. 1987 May;19(5):671-8.
ceftriaxone	30.2 ± 13.2	infusion	6 healthy volunteers	duodenal perfusion	8 hr	Chromatograpy	554	anion		Arvidsson A, et.al. Eur J Clin Invest. 1988 Jun;18(3):261-6.
	29.5 ± 24.4	infusion	4 healthy volunteers	duodenal perfusion	6-8 hr	HPLC				Arvidsson A, et.al. J Antimicrob Chemother. 1982 Sep;10(3):207-15
cefuroxime	0.13 0.03	i.v. i.v.	10 patients 5 healthy subjects	T-tube duodenal intubation	12 hr 4 hr	Bioassay	424.39	anion		Brogmd JM, et.al. Chemotherapy. 1981;27(1):18-28
cephacetrile	0.02	i.v.	5 patients	T-tube			339.32	anion		Brogmd JM, et.al. Antimicrob Agents Chemother. 1980 Jul;18(1):69-76.
cephaloridine	0.12	i.v.	5 patients	T-tube	12 hr		417.5	zwitter		Brogard JM, et.al. J Antimicrob Chemother. 1987 May;19(5):671-8
cephalothin	0.01	i.v.	5 healthy subjects	duodenal intubation			396.44	anion		Brogard JM, et.al. Antimicrob Agents Chemother. 1980 Jul;18(1):69-76.
	0.025 ± 0.005	i.v.	7 patients	T-tube	6 hr	Bioassay				Ratzan KR, et.al. Antimicrob Agents Chemother. 1978 Jun;13(6):985-7
flomoxef	0.15	i.v.	8 patients	T-tube	6 hr	HPLC	496.5	anion	MRP2	Hishikawa S, et.al. Br J Clin Pharmacol. 2001 Jul;52(1):65-8
moxalactam	0.46	i.v.	6 patients	T-tube	8 hr	HPLC	520.47	anion		Uchida K, et.al. J Pharmacobiodyn. 1985 Nov;8(11):981-8.
Other beta-lactam antibiotics:										
sulbactam	0.24 ± 0.2	i.v.	5 patients	T-tube	4 hr	HPLC	233.24	anion		Morris DL, et.al. Rev Infect Dis. 1986 Nov-Dec;8 Suppl 5:S589-92
tazobactam	0.2 ± 0.1	short infusion	5 patients	T-tube	7 hr	HPLC	300.29	anion		Westphal JF, et.al. Antimicrob Agents Chemother. 1997 Aug;41(8):1636-40.
Quinolone Antibiotics:										
ciprofloxacin	0.48	p.o	5 patients	T-tube	12 hr	Bioassay	331	zwitter		Tanimura H, et.al. Arzneimittelforschung. 1986 Sep;36(9):1417-20 % of Dose: 0.29 ± 0.09. F: 60 ± 12. (Goodman & Gilman)
	0.53	p.o	12 patients	T-tube	24 hr	HPLC				Brogard JM, et.al. Antimicrob Agents Chemother. 1985 Aug;28(2):311-4 % of Dose: 0.317
rufloxacin	0.9 ± 0.8	p.o	12 patients	T-tube	72 hr	HPLC	363.41	zwitter		Privitera G, et.al. Antimicrob Agents Chemother. 1993 Dec;37(12):2545-9 The oral bioavailability of rufloxacin in humans is unknown. Assumed to be 100%.
temafloxacin	2.49	p.o	8 patients	T-tube	72 hr	HPLC	417.39	zwitter		Sörgel F, et.al. Clin Pharmacokinet. 1992;22 Suppl 1:33-42 % of Dose: 2.24 + 1.14%. F: ≥ 90% J Antimicrob Chemother. 1991 Dec;28 Suppl C:55-64
Other antibiotics:										
chloramphenicol	0.17	p.o	1 patient	T-tube	24 hr	Bioassay Colorimetric	323.13	neutral	P-gp	GLAZKO AJ, et.al. J Pharmacol Exp Ther. 1949 Aug;96(4 Pt. 1):445-59 % of dose: 0.14; F: 75 - 90% (Goodman Gilman)

Compounds in Training set	% dose excreted into bile	Administration Route	Population Studied	Sample Collection Method	Collection Interval	Analytical Method	Molecular Weight	Charge Status	Substrate of Efflux transporter	Reference
erythromycin	12.6	i.v.	2 patients	duodenal aspiration	20 hr	Bioassay	733.95	cation	MRP2; P-gp	TAKIMURA Y, et.al. Antibiotic Med Clin Ther. 1955 Oct;1(10):561-6
rifamycin SV	24	i.v.	2 patients	T-tube	12 hr	Bioassay	697.77	anion		Acocella G, et.al. Gut. 1968 Oct;9(5):536-45
Anti-cancer Agents:										
cyclophosphamide	3.5	i.v.	1 patient	T-tube	32 hr	GC	261.09	neutral		Dooley JS, et.al. Cancer Chemother Pharmacol. 1982;9(1):26-9.
doxorubicin (adriamycin)	17.2	i.v.	1 patient	T-tube	7 d	Radioactive	543.52	cation	MRP2; P-gp	Riggs CE Jr, et.al. Clin Pharmacol Ther. 1977 Aug;22(2):234-41
	13.5	i.v.	1 patient	T-tube	24 hr	HPLC				Wilkinson PM, et.al. Cancer Chemother Pharmacol. 1979;2(2):121-5
	10	i.v.	1 patient	T-tube	7 d	HPLC				Camaggi CM, et.al. Cancer Chemother Pharmacol. 1988;21(3):221-8
epirubicin	21.9 ± 2.7	i.v.	3 patients	T-tube	96 hr	Chromatography	543.52	cation	MRP2; P-gp	Camaggi CM, et.al. Cancer Chemother Pharmacol. 1986;18(1):47-50
idarubicin	1.07	p.o	2 patients	T-tube	7 d	LC	497.49	cation		Pannuti F, et.al. Cancer Chemother Pharmacol. 1986;16(3):295-9. % fo dose: 0.3; F: 28% (Goodman and Gilman)
irinotecan (CPT-11)	2.9, 21.8	infusion	2 patients	T-tube	up to 48 hr	HPLC	586	cation	MRP2; P-gp	Lokiec F, et.al. Cancer Chemother Pharmacol. 1995;36(1):79-82.
	18.46	infusion	1 patient	T-tube	72 hr	HPLC				Slatter JG, et.al. Drug Metab Dispos. 2000 Apr;28(4):423-33
methotrexate (MTX)	6.7 - 9	i.v.	6 patients	duodenal	24 hr	Radioactive	454.44	anion	MRP2	Shen DD, et.al.Clin Pharmacokinet. 1978 Jan-Feb;3(1):1-13
	20	i.v.	1 patient	T-tube	12 hr					Calvert AH, et.al.Cancer Treat Rep. 1977 Dec;61(9):1647-56
	3 ~ 12	infusion		T-tube	4.5 hr	HPLC	Suda Y, et.al. Gan To Kagaku Ryoho. 1990 Jul;17(7):1357-63			
	8.7 - 26	p.o	1 patient	T-tube	39 hr		Nuernberg B, et.al. Arthritis Rheum. 1990 Jun;33(6):898-902 already corrected by bioavailability			
mitoxantrone	1.11	infusion	1 patient	T-tube	96 hr	HPLC	444.4	cation		Savaraj N, et.al. Cancer Chemother Pharmacol. 1982;8(1):113-7
taxol	3	infusion	1 patient	T-tube	48 hr	HPLC	853.93	neutral	MRP2; P-gp	Monsarrat B, et.al. J Natl Cancer Inst Monogr. 1993;(15):39-46
vincristine (VCR)	10.47 28.4 (total)	i.v.	1 patient	T-tube	72 hr	Radioactive/HPLC	824.98	cation	MRP2; P-gp	Jackson DV Jr, et.al. Clin Pharmacol Ther. 1978 Jul;24(1):101-7
Dyes:										
BSP	10.1	infusion	1 patient	T-tube	6 hr	Colortimetric	794.03	anion	MRP2	SCHOENFIELD LJ, et.al. J Clin Invest. 1964 Jul;43:1424-32
indocyanine green (ICG)	80	i.v.	15 patients	T-tube	18 hr	Spectrometry	755.01	anion	MRP2	Meijer DK, et.al. Eur J Clin Pharmacol. 1988;35(3):295-303
NSAIDs:										
diclofenac	1	i.v.	1 patient	T-tube	8 hr	Radioactive	296	anion		Stierlin H, et.al. Xenobiotica. 1979 Oct;9(10):611-21
tolfenamic acid	1.1 + 0.3	infusion	8 patients	T-tube	24 hr	Radioactive/TLC	261	anion		Pentikäinen PJ, et.al. Eur J Clin Pharmacol. 1984;27(3):349-54
paracetamol (acetaminophen)	0.65	p.o	6 patients	T-tube	8 hr	HPLC	151.2	neutral	MRP2; P-gp	Siegers CP, et.al. Pharmacology. 1984;29(5):301-3 % of dose: 0.57; F: 88% (Goodman Gilma.)
Anti-histidine:										
ranitidine	1.47 ± 1	i.v.	3 Patients	T-tube	24 hr	HPLC	314	cation	P-gp	Klotz U, et.al. Eur J Clin Pharmacol. 1990;39(1):91-2
famotidine	0.09	i.v.	2 patients	T-tube	24 hr	HPLC	337.45	cation	P-gp	Klotz U, et.al. Eur J Clin Pharmacol. 1990;39(1):91-2
cimetidine	1.8	i.v.	6 Healthy subjects		8 hr		252.34	cation	P-gp	Somogyi A, et.al. Clin Pharmacokinet. 1983 Nov-Dec;8(6):463-95

Compounds in Training set	% dose excreted into bile	Administration Route	Population Studied	Sample Collection Method	Collection Interval	Analytical Method	Molecular Weight	Charge Status	Substrate of Efflux transporter	Reference
Quaternary ammoniums:										
emeprium	28	p.o.	2 patients	T-tube	12 hr	GC	283.46	cation		Hallén B, et.al. Pharmacol Toxicol. 1987 Oct;61(4):242-5
hexafluorenium (Mylaxen)	27 - 48	i.v.	6 patients	T-tube	up to 30hr	TLC	504.76	cation		Meijer DK, et.al. Eur J Pharmacol. 1971 May;14(3):280-5
metocurine	2.1 ± 0.4	i.v.	10 patients	T-tube	48 hr	Radioactive	654.85	cation		Meijer DK, et.al. Anesthesiology. 1979 Nov;51(5):402-7
pancuronium ((Pavulon)	6.6 10.9 (total)	i.v.	7 patients	T-tube	30 hr	Fluorimetric/TLC	574.9	cation		Agoston S, et.al. Acta Anaesthesiol Scand. 1973;17(4):267-75
pipecuronium	2	i.v.	6 patients	T-tube	24 hr	HPLC/TLC	604.92	cation		Wierda JM, et.al. Eur J Anaesthesiol. 1991 Nov;8(6):451-7
thiazinamium methylsulfate (Multergan)	16.6 ± 4.0	i.m	4 patients	T-tube	24 hr	TLC	300.47	cation		Jonkman JH, et.al. Pharm Weekbl Sci. 1982 Oct 22;4(5):122-8 F (i.m.): 100%. Lancet. 1976 Mar 27;1(7961):693
d-tubocurarine	11.8 ± 2.4	i.v.	10 patients	T-tube	48 hr	Radioactive	610.76	cation		Meijer DK, et.al. Anesthesiology. 1979 Nov;51(5):402-7
Others:										
napsagatran	66.3	i.v.	Healthy subjects			HPLC	558.6	zwitter		Lavé T, et.al. J Pharm Pharmacol. 1999 Jan;51(1):85-91
valsartan	88	i.v.	1 patient	T-tube	24 hr	HPLC	435.5	anion	MRP2	Brookman LJ, et.al. Clin Pharmacol Ther. 1997 Sep;62(3):272-8
diazepam	0.16 15 (total)	i.v.	5 patients	T-tube	5 d	Radioactive	284.74	neutral		Mahon WA, et.al. Clin Pharmacol Ther. 1976 Apr;19(4):443-50
elsamitrucin	22	infusion	1 patient	T-tube	51 hr	HPLC	654	zwitter		Raber MN, et.al. Cancer Res. 1992 Mar 15;52(6):1406-10
carbamazepine	1.4	p.o	4 patients	T-tube	72 hr	GC	236.27	neutral		Terhaag B, et.al. Int J Clin Pharmacol Biopharm. 1978 Dec;16(12):607-9 % of dose: 1; F: >70% (Goodman Gilman)
cyclosporine (CyA)	0.85	p.o	patients	T-tube		HPLC Radioimmunoassay	1202.6	neutral	P-gp	Venkataramanan R, et.al. Trans. Proc., 1985, Vd XVII, No 1: 286-289
loglycamide (Biligram)	20.6	infusion	5 patients	T-tube	2 hr	Spectrometric	1127.71	anion		Bell GD, et.al. Br J Radiol. 1978 Apr;51(604):251-6
phenylbutazone	0.065 9.5 (total)	p.o	1 patient	T-tube	4 d	Radioactive TLC	308.38	neutral		Aarbakke J, et.al. Eur J Clin Pharmacol. 1977;11(5):359-66 % of dose: 0.06; F: 80-100% (Goodman Gilman)
acebutolol	7.57 2.7, 8.5 (total)	p.o	2 patients	T-tube	24 hr	TLC	336.43	cation	P-gp	Kaye CM. J Pharm Pharmacol. 1976 May;28(5):449-50 % of dose: 2.8; F: 37 ± 12% (Goodman Gilman)
methadone	0.062	p.o	1 patient	T-tube	24 hr	GC	309	cation		Kreek MJ, et.al. Res Commun Chem Pathol Pharmacol. 1980 Jul;29(1):67-78 % of dose: 0.057; F: 92% (Goodman Gilman)
meperidine	0.2	i.v.	2 normal Volunteers	Duodenal Intubation	2.5 hr	GC	247.33	cation		Dunkerley R, et.al. Clin Pharmacol Ther. 1976 Nov;20(5):546-51
ramipril	0.36	p.o	8 patients	T-tube	24 hr	GC	416.5	anion		Verho M, et.al. Curr Med Res Opin. 1995;13(5):264-73 % of dose: 0.1; F: 28% (Goodman Gilman)
olsalazine (ADS)	5.6 ± 4.5	i.v.	5 healthy Volunteers	Duodenal Aspiration	up to 4.5 hr	HPLC	302.24	anion		Ryde M, et.al. Eur J Drug Metab Pharmacokinet. 1987 Jan-Mar;12(1):17-24

Compounds in Training set	% dose excreted into bile	Administration Route	Population Studied	Sample Collection Method	Collection Interval	Analytical Method	Molecular Weight	Charge Status	Substrate of Efflux transporter	Reference
digoxin	17.1 30.6 (total)	i.v.	5 healthy volunteers	intestinal perfusion	24 hr	Radioactive	781	neutral	P-gp	Caldwell JH, et.al. Clin Pharmacol Ther. 1976 Apr;19(4):410-5
ouabain	3.83 5.4 (total)	i.v.	4 patients	T-tube	6 d	radioimmunoassay	584.65	neutral		Selden R, et.al. J Pharmacol Exp Ther. 1974 Mar;188(3):615-23

Compounds in Testing set	% dose excreted into bile	Administration Route	Population Studied	Sample Collection Method	Collection Interval	Analytical Method	Molecular Weight	Charge Status	Substrate of Efflux transporter	Reference
menogaril	2.1 4.2, 1.9 (total)	i.v.	2 patients	T-tube	24 hr	HPLC	541.55	cation		Egorin MJ, et.al. Cancer Res. 1986 Mar;46(3):1513-20
ceftium (NSC 264137)	4.8	short infusion	1 patient	T-tube	17 hr	HPLC	278.36	cation		Bernadou J, et.al. Cancer Chemother Pharmacol. 1985;15(1):63-5
rocuronium	7 ± 6	i.v.	11 patients	T-tube	48 hr	HPLC	530.8	cation		Proost JH, et.al. Br J Anaesth. 2000 Nov;85(5):717-23
vecuronium	10.49	i.v.	6 patients	T-tube	24 hr	Fluorometric	558.85	cation	P-gp	Bencini AF, et.al. Br J Anaesth. 1986 Sep;58(9):988-95.
amsacrine (NSC 249992)	4 ~ 5	i.v.	2 patients	T-tube	72 hr	Radioactive	393.46	cation		Hall SW, et.al. Cancer Res. 1983 Jul;43(7):3422-6
disopyramide	1.29	p.o.	3 patients	T-tube	48 hr	HPLC	339.47	cation		le Corre P, et.al. Chirality. 1992;4(2):80-3 % of Dose: 1.5 (R-), 0.7 (S-); F: 0.85 J Pharmacokinet Biopharm. 1984 Jun;12(3):289-313
practolol	12.3	p.o	6 patients	T-tube	48 hr	Colorimetric	266.34	cation		Carruthers SG, et.al. Ir J Med Sci. 1976 Jun;145(6):187-94 % of Dose: 12.3 ± 6.7; F: ~ 100%. Clin Pharmacokinet. 1976;1(4):233-63.
nortriptyline	3.92	p.o.	1 patient	T-tube	24 hr	GC	263.38	cation		Gard H, et.al. Clin Toxicol. 1973;6(4):571-84 % of Dose: 2%. F: 51% (Goodman & Gilman)
butopropazine	0	i.v.	2 patients	T-tube		HPLC	434.63	cation		Overzet F, et.al. Xenobiotica. 1985 Jan;15(1):1-10
propofol	0.1 - 1.2	i.v.	5 patients	T-tube	24 hr	Radioactive/HPLC	178.3	neutral		Gray PA, et.al. Xenobiotica. 1992 Jan;22(1):105-14
floctafenin	0.21	p.o	1 patient	T-tube	3-4 hr	Radioactive	406.36	neutral		Pottier J, et.a. Drug Metab Dispos. 1975 May-Jun;3(3):133-47 % of Dose: 0.1; Absorption extent: ≥ 47%
felodipine	0.1	i.v.	4 healthy subjects	duodenal aspiration	4.5 hr	Radioactive/GC	384.25	neutral		Suffin TA, et.al. Eur J Clin Pharmacol. 1990;38(5):421-4
caffeine	0.95	p.o.	8 patients	T-tube	10 hr	HPLC	194.19	neutral		Holstege A, et.al. J Hepatol. 1993 Jan;17(1):67-73 F: 100%. Eur J Clin Pharmacol. 1983;24(1):93-8
mebendazole	4.12	p.o.	1 patient	T-tube	12 hr	HPLC	295.29	neutral		Witassek F, et.al. Eur J Clin Pharmacol. 1983;25(1):81-4 % of Dose: 0.7. F: 17%, Br J Clin Pharmacol. 1982 Sep;14(3):453-5.
rosuvastatin	59	p.o	5 healthy Volunteers	intestinal perfusion	4 hr	LC/MS	481.54	anion		Bergman E, et.al. Eur J Pharm Sci. 2006 Nov;29(3-4):205-14 % of dose: 11.8 ± 5.4; F:20% (Goodman Gilman)
bumetanide	2.16	p.o	1 patient	T-tube	48 hr	Radioactive/TLC	364.42	anion		Halladay SC, et.al. Clin Pharmacol Ther. 1977 Aug;22(2):179-87 % of Dose: 1.7. F: 0.787 on average Clin Pharmacol Ther. 1988 Nov;44(5):487-500
rifamide	55 - 57	i.m.	4 patients	T-tube	24-48 hr	Bioassay	810.93	anion		Acocella G, et.al. Gut. 1966 Aug;7(4):380-6
ceftiofur	5.3 - 16				6 hr		627.65	anion		Tanaka H, et.al. J Antimicrob Chemother. 1987 Sep;20(3):417-20
ceftiofur	3.31 ± 3.0	infusion	6 healthy subjects	Duodenal perfusion	~ 6 hr	HPLC	383.4	anion		Gundert-Remy U, et.al. Eur J Clin Pharmacol. 1985;28(4):463-7
ceftiofur	28.1	i.v.	10 patients	T-tube	24 hr	HPLC	612.64	anion	MRP2	Brogard JM, et.al. Antimicrob Agents Chemother. 1988 Sep;32(9):1360-4

Compounds in Testing set	% dose excreted into bile	Administration Route	Population Studied	Sample Collection Method	Collection Interval	Analytical Method	Molecular Weight	Charge Status	Substrate of Efflux transporter	Reference
diflunisal	0 3.7 (total)	p.o	10 patients	T-tube	24 hr	HPLC	250.2	anion		Verbeeck RK, et.al. Eur J Clin Pharmacol. 1988;34(4):423-6
aztreonam	0.18 ± 0.16 0.34 - 0.9	i.v. infusion	4 patients 8 patients	T-tube T-tube	12 hr 6 hr	Bioassay	435.43	anion		Martinez OV, et.al. Antimicrob Agents Chemother. 1984 Mar;25(3):358-61 Yura J, et.al. Jpn J Antibiot. 1990 Mar;43(3):534-42
clavulanic acid (Claventin)	0.04 ± 0.01	i.v.	10 patients	T-tube	12 hr	HPLC	199.16	anion		Brogard JM, et.al. Int J Clin Pharmacol Ther Toxicol. 1989 Mar;27(3):135-44.
benzbromarone	1.77 49 (total)	p.o	1 patient	T-tube	5 d	Radioactive/TLC	424.08	anion		Broekhuysen J, et.al. Eur J Clin Pharmacol. 1972 Mar;4(2):125-30 % of Dose: 0.88 (scaled from 0.2). Absorption extent: 50%.