



## REFERENCES

1. Kucers, A. in The Used of Antibiotics, 3<sup>rd</sup> ed., pp. 1-12,  
William Heinemann Medical Books Ltd., London, 1979.
2. Kagan, B.M. in Antimicrobial Therapy, 3<sup>rd</sup> ed., pp. 20-42,  
W.B. Saunders, Philadelphia, 1980.
3. Meyers, F.H., Jawetz, E. and Goldfien, A. in Review of Medical Pharmacology, 7<sup>th</sup> ed., pp. 542-545, Lange Medical Publications, California, 1980.
4. Reeves, D.S. and Bullock, D.W. "The Aminopenicillins :  
Development and Comparative Properties" Infection 7  
Suppl. 5 (1979) : S 425 - S433.
5. Hellstrom, K., Rosen, A. and Swahn, A. "Absorption and  
Decomposition of Potassium <sup>35</sup>S-phenoxymethyl Peni-  
cillin" Clin. Pharmacol. Ther. 16 (1974) : 826-833.
6. Cole, M., Kenig, M.D. and Hewitt, V.A. "Metabolism of  
Penicillins to Penicilloic Acids and 6-Aminopenicil-  
lanic Acid in Man and Its Significance in Assessing  
Penicillin Absorption" Antimicrob. Agents Chemother.  
3 (1973) : 463-468.
7. Rolinson, G.N. and Shirley, S. "Microbiological Studies on  
a New Broad-spectrum Penicillin, 'Penbritin'"  
Br. Med. J. 2 (1961) : 191-196.

8. Richmond, M.H. in The Evolution of  $\beta$ -lactams over the Years in  $\beta$ -lactam Antibiotics: The Background to Their Use as Therapeutic Agents; pp. 47-55, Hoechst Aktiengesellschaft, Paddon and Brooks Ltd., Kent, 1981.
9. Stewart, G.T., Coles, H.M.T., Nixon, H.H. and Holt, R.J. "Penbritin: An Oral Penicillin with Broad-spectrum Activity" Br. Med. J. 2(1961): 200-206.
10. Gordon, R.C., Regamey, C. and Kirby, W.M.M. "Comparative Clinical Pharmacology of Amoxycillin and Ampicillin Administered Orally" Antimicrob. Agents Chemother. 1(1972): 504-507.
11. Klein, J.O., Finland, M. and Wilcox, C. "Ampicillin Activity in Vitro and Absorption and Excretion in Normal Young Men" Am. J. Med. Sci. 245(1963): 544-555.
12. Knudsen, E.T., Rolinson, G.N. and Shirley, S. "Absorption and Excretion of Penbritin" Br. Med. J. 2(1961): 198-200.
13. Triggs, E.J., Johnson, J.M. and Learoyd, B. "Absorption and Disposition of Ampicillin in the Elderly" Eur. J. Clin. Pharmacol. 18(1980): 195-198.
14. Lode, H., Janisch, P., Kupper, G. and Weuta, H. "Comparative Clinical Pharmacology of Three Ampicillins and Amoxycillin Administered Orally" J. Infect. Dis. 129 Suppl. (1974): S 156 - S 167.

15. Sjovall, J. "Dose Dependence in Human Absorption of Aminopenicillin" Infection 7 Suppl. 5(1979) : S 458 - S 462.
16. Nordbring, F. "Review of Side effects of Aminopenicillins" Infection 7 Suppl. 5(1979) : S 503 - S 506.
17. Sutherland, R. and Rolinson, G.N. " $\alpha$ -Amino-p-hydroxybenzylpenicillin (BRL 2333), a New Semi-synthetic Penicillin: In vitro Evaluation" Antimicrob. Agents Chemother. 1971 : 411-415.
18. Neu, H.C. and Winshell, E.B. "Pharmacological Studies of 6- [D(-)  $\alpha$ -amino-p-hydroxyphenylacetamido] penicillanic acid in Humans" Antimicrob. Agents Chemother. 1971 : 423-426.
19. Croydon, E.A.P. and Sutherland, R. " $\alpha$ -Amino-p-hydroxybenzylpenicillin (BRL 2333), a New Semi-synthetic Penicillin: Absorption and Excretion in Man" Antimicrob. Agents Chemother. 1971 : 427-430.
20. Eshelman, F.N. and Spyker, D.A. "Pharmacokinetics of Amoxicillin and Ampicillin: Crossover Study of The Effect of Food" Antimicrob. Agents Chemother. 14(1978) : 539-543.
21. Verbist, L. "Triple Crossover Study on Absorption and Excretion of Ampicillin, Pivampicillin and Amoxicillin" Antimicrob. Agents Chemother. 6(1974) : 588-593.

22. Brogden, R.N., Speight, T.M. and Avery, G.S. "Amoxycillin: A Review of its Antibacterial and Pharmacokinetic Properties and Therapeutic Uses" Drugs 9(1975): 88-104.
23. Jusko, W.J. and Lewis, G.P. "Precautions in Pharmacokinetic Evaluation of Ampicillin Precursor" Lancet 1(1972): 690-691.
24. Rolinson, G.N. "Laboratory Evaluation of Amoxycillin" Chemotherapy 18 Suppl. (1973): 1-10 cited by Reeves, D.S. and Bullock, D.W. "The Aminopenicillins: Development and Comparative Properties" Infection 7 Suppl. 5(1979): S 425 - S 433.
25. Sutherland, R., Croydon, E.A.P. and Rolinson, G.N. "Amoxycillin: A New Semi-synthetic Penicillin" Br. Med. J. 3(1972): 13-16.
26. Nayler, J.H.C. "Structure-activity Relationships in Semi-synthetic Penicillins" Proc. R. Soc. Lond. 179(1971): 357-367 cited by Reeves, D.S. and Bullock, D.W. "The Aminopenicillins: Development and Comparative Properties" Infection 7 Suppl. 5(1979): S 425 - S 433.
27. Bodin, N.O., Ekstrom, B., Forsgren, U., Jalar, L.P., Magni, L., Ramsey, C.H. and Sjoberg, B. "Bacampicillin: a New Orally Well-absorbed Derivative of Ampicillin" Antimicrob. Agents Chemother. 8(1975): 518-525.

28. Clayton, J.P., Cole, M., Elson, S.W. and Ferres, H. "BRL 8988 (Talampicillin), a Well-absorbed Oral Form of Ampicillin" Antimicrob. Agents Chemother. 5(1975) : 670-671.
29. Daehne, W. von, Godtfredsen, W.O., Rohott, K. and Tybring, L. "Pivampicillin, a New Orally Active Ampicillin Ester" Antimicrob. Agents Chemother. 1971 : 431-437.
30. Shiobara, Y., Tachibana, A., Sasaki, H., Watanabe, T. and Sado, T. "Phthalidyl-D- $\alpha$ -aminobenzylpenicillinate hydrochloride (PC-183), a New Orally Active Ampicillin Ester" J. Antibiot. 27(1974) : 665-673.
31. Wilcox, J.B., Brogden, R.N. and Avery, G.S. "Pivampicillin: A Preliminary Report of its Pharmacokinetic Properties and Therapeutic Efficacy" Drugs 6(1973) : 94-103.
32. Loo, J.C.K., Foltz, E.L., Wallick, H. and Kwan, K.C. "Pharmacokinetics of Pivampicillin and Ampicillin in Man" Clin. Pharmacol. Ther. 16(1974) : 35-43.
33. Rozenzweig, M., Staquet, M. and Klastersky, J. "Antibacterial Activity and Pharmacokinetics of bacampicillin and Ampicillin" Clin. Pharmacol. Ther. 19(1975) : 592-597.
34. Ferrara, A. and Zanon, P. "Pharmacokinetics of Bacampicillin Administered Orally" Drug Exp. Clin. Res. 5(1979) : 189-195.

35. Sjovall, J., Magni, L. and Bergan, T. "Pharmacokinetics of Bacampicillin Compared with Those of Ampicillin, Pivampicillin and Amoxycillin" Antimicrob. Agents Chemother. 13(1978) : 90-96.
36. Tan, J.S. and Salstrom, S.J. "Bacampicillin, Ampicillin, Cephalothin and Cephapirin Levels in Human Blood and Interstitial fluids" Antimicrob. Agents Chemother. 15(1979) : 510-512.
37. Neu, H.C. "The Pharmacokinetics of Bacampicillin" Rev. Infect. Dis. 3(1981) : 110-116.
38. Braga, P.C. and Fraschini, F. "Clinical Pharmacokinetic Evaluation of Bacampicillin" Clin. Ther. 4(1981) : 32-41.
39. Ehrnebo, M., Nilsson, S.O. and Boreus, L.O. "Pharmacokinetics of Ampicillin and its Prodrugs, Bacampicillin and Pivampicillin in Man" J. Pharmacokinet. Biopharm. 7(1979) : 429-451.
40. Koldestam, A., Olsson, S. and Berglund, L. "A Double-blind Comparison of the Clinical Tolerance of Bacampicillin and Pivampicillin" Infection 7 Suppl. 5(1979) : S 495 - S 498.
41. Hallander, H.O., Flodstrom, A. and Sjovall, J. "Pharmacological and Clinical Study of Bacampicillin in Acute Peritonsillitis : a Comparison with Ampicillin" Antimicrob. Agents Chemother. 11(1977) : 185-190.

42. Virtanen, S. and Lahikainen, E.A. "Ampicillin Concentrations in Middle Ear Effusions in Acute Otitis Media after Administration of Bacampicillin" Infection 7 Suppl. 5(1969) : S 472 - S 474.
43. Sorri, M., Jokinen, K. and Peltomaki, E. "A Pharmacokinetic Study of Bacampicillin in Patients with Chronic Maxillary Sinusitis" Infection 7 Suppl. 5(1979) : S 475 - S 477.
44. Craig, W.A. and Gerber, A.U. "Worldwide Experience with Bacampicillin Administered Twice a Day" Rev. Infect. Dis. 3(1981) : 171-177.
45. Beregogne-Berezin, E., Berthelot, G., Kafe, H. and Morel, C. "Penetration of Ampicillin into Human Bronchial Secretion" Infection 7 Suppl. 5(1979) : S 463 - S 464.
46. Maesen, F.P.V. and Davies, B.I. "A Clinical Comparison of Ampicillin, Ampicillin Esters (Bacampicillin and Pivampicillin) and Amoxycillin in Acute Exacerbation of Chronic Bronchitis" Infection 7 Suppl. 5(1979) : S 483 - S 486.
47. Welling, P.G., Huang, H., Koch, P.A., Craig, W.A. and Madsen, P.O. "Bioavailability of Ampicillin and Amoxycillin in Fasted and Non-fasted Subjects" J. Pharm. Sci. 66(1977) : 549-552.
48. Reynolds, J.E.F. (ed.) Penicillins and Other Antibiotics in Martindale The Extra Pharmacopoeia 28<sup>th</sup> ed., pp. 1099, The Pharmaceutical Press, London, 1982.

49. Jordan, M.C. de Maine, J.B. and Kirby, W.M.M. "Clinical Pharmacology of Pivampicillin as Compared with Ampicillin" Antimicrob. Agents Chemother. 2(1970) : 438-441.
50. Roholt, K., Nielsen, B. and Kristensen, E. "Clinical Pharmacology of Pivampicillin" Antimicrob. Agents Chemother. 6(1974) : 563-571.
51. The United States Pharmacopeia, Twenty-first Revision and The National Formulary, Sixteenth edition, pp. United States Pharmacopeial Convention Inc., Rockville, 1984.
52. Ibid., pp. 84-85.
53. Windholz, M. The Merck Index : An Encyclopedia of Chemicals, Drugs and Biologicals, 10<sup>th</sup> ed., pp. 135, Merck & Co., Inc., N.J., 1983.
54. Ekstrom, B., Forsgren, U., Jalar, L.P., Magni, L., Sjoberg, B. and Sjovall, J. "Preclinical Studies with Bacampicillin: a New Orally Well-absorbed Prodrug of Ampicillin" Drug Exp. Clin. Res. 3(1977) : 3-10.
55. Davies, B. and Maesen, F. "Serum and Sputum Antibiotic Levels after Ampicillin, Amoxicillin and Bacampicillin in Chronic Bronchitis" Infection 7 Suppl. 5 (1979) : S 465 - S 468.



56. Ricia, P., Spengler, J. and Edwards, L.D. "Comparative Study of Bacampicillin and Ampicillin in the Treatment of Uncomplicated Gonorrhoea" Br. J. Vener. Dis. 56 (1980) : 151-155.
57. Walling, J., Bengtsson, S., Eriksson, G., Kallings, L.O., Sandstrom, E. and Wallmark, G. "A Dose Response Study with Bacampicillin in Uncomplicated Gonorrhoea" Infection 7 Suppl. 5 (1979) : S 487 - S 488.
58. Muller-Ehrenberg, K.H. and Muller, G. "Bacampicillin and Ampicillin in Urinary Tract Infections: a Double-blind Comparison of Efficacy and Tolerance" Infection 7 Suppl. 5 (1979) : S 489 - S 491.
59. Ritzerfeld, W. "Efficacy of Bacampicillin and Ampicillin in Experimental Pyelonephritis in the Rats" Infection 7 Suppl. 5 (1979) : S 443 - S 447.
60. Grafford, K. and Nilsson, B.S. "Twice Daily Dosage of Bacampicillin: a Summary of Clinical Documentation" J. Antimicrob. Chemother. 8 Suppl. C (1981) : 119-127.
61. Ekstrom, B., Forsgren, U., Magni, L., Sjoval, J., Sjoberg, B. and Tolf, R. "Bacampicillin, a Well Absorbed Pro-drug of Ampicillin: a Report on Properties and Clinical Experiences" J. Drug Res. 2 (1977) : 39 cited by Koldestam, A., Olsson, S. and Berglund, L. "A Double-blind Comparison of the Clinical Tolerance of Bacampicillin and Pivampicillin" Infection 7 Suppl. 5 (1979) : S 495 - S 498.

62. Bergan, T. "Aminopenicillins : Concluding Remarks" Infection 7 Suppl. 5(1979) : S 507 - S 512.
63. Heimdahl, M., Nord, C.E. and Weiland, K. "Effect of Bacampicillin on Human Mouth, Throat and Colon Flora" Infection 7 Suppl. 5(1979) : S 446 - S 451.
64. Swahn, A. "On the Absorption and Metabolism of <sup>35</sup>S-ampicillin" Eur. J. Clin. Pharmacol. 9(1975) : 117-124 cited by Neu, H.C. "The Pharmacokinetics of Bacampicillin" Rev. Infect. Dis. 3(1981) : 110-116.
65. Swahn, A. "Gastrointestinal Absorption and Metabolism of Two <sup>35</sup>S-labelled Ampicillin Esters" Eur. J. Clin. Pharmacol. 9(1976) : 299-306 cited by Neu, H.C. "The Pharmacokinetics of Bacampicillin" Rev. Infect. Dis. 3(1981) : 110-116.
66. Jannerfeldt, E. Astra Lakemedel, Unpublished Data cited by Neu, H.C. "The Pharmacokinetics of Bacampicillin" Rev. Infect. Dis. 3(1981) : 110-116.
67. Bergan, T. "Pharmacokinetic Comparison of Oral Bacampicillin and Parenteral Ampicillin" Antimicrob. Agents Chemother. 13(1978) : 971-974.
68. Abramowicz, M. "Continuous versus Intermittent Intravenous Antibiotic" The Medical Letter, 10(1968) : 57-58.

69. Barza, M., Bruschi, J., Bergeron, M.G. and Weinstein, L.  
"Penetration of Antibiotics into Fibrin Loci in vivo.  
III. Intermittent versus Continuous Infusion and the  
Effect of Probenecid" J. Infect. Dis. 129(1974) :  
73-78.
70. Bergan, T. "Kinetics of Tissue Penetration. Are High Plasma  
Peak Concentrations or Sustained Levels Preferable  
for Effective Antibiotic Therapy?" Scand. J. Infect.  
Dis. Suppl. 14(1978) : 36-46.
71. Simon, C., Malerczyk, V. and Klaus, M. "Absorption of Bac-  
ampicillin and Ampicillin and Penetration into Body  
Fluids (Skin Blister Fluids, Saliva, Tears) in  
Healthy Volunteers" Scand. J. Infect. Dis. Suppl.  
14(1978) : 228-232.
72. Hallstrom, O., Keyrilainen, O. and Markkula, H. "Ampicillin  
Concentrations in Normal and Pathological Lung  
Tissues after Oral Administration of Bacampicillin"  
Infection 7 Suppl. 5(1979) : S 469 - S 471.
73. Kallings, L.O., Eriksson, G., Hoffner, S. and Linse, U.B.  
"Penetration of Ampicillin into Urethra and Cervical  
Secretions after Oral Administration of Bacampicillin"  
Infection 7 Suppl. 5(1979) : S 478 - S 481.
74. Gibaldi, M. and Perrier, D. One-compartment Model in Phar-  
macokinetics (Swarbrick, J. ed.) pp. 1-43, Marcel  
Dekker Inc., New York, 1975.

75. Dittert, L.W. and Bourne, W.A. Pharmacokinetics in Modern Pharmaceutics (Banker, G.S. and Rhodes, C.T. eds.) pp. 87-128, Marcel Dekker Inc., New York, 1979.
76. Rowland, M. and Tozer, T.N. (eds.) Disposition and Absorption Kinetics in Clinical Pharmacokinetics: Concepts and Applications, pp. 79-140, Lea & Febiger, Philadelphia, 1980.
77. Naizi, S. Pharmacokinetic Principles in Textbook of Biopharmaceutics and Clinical Pharmacokinetics, pp. 152-154, Appleton-Century-Crofts, New York, 1979.
78. Winter, M.E., Katcher, B.S. and Koda-Kimble, M.A. in Basic Clinical Pharmacokinetics, pp. 203, Applied Therapeutics, Inc., 1980.
79. Kunin, C.M. and Finkelberg, Z. "Oral Cephalexin and Ampicillin: Antimicrobial Activity, Recovery in Urine and Persistence in Blood of Uremic Patients" Ann. Intern. Med. 72(1970): 349-356, cited by Gordon, R.C., Regamey, C. and Kirby, W.M.M. "Comparative Clinical Pharmacology of Amoxicillin and Ampicillin Administered Orally" Antimicrob. Agents Chemother. 1(1972): 504-507.
80. Vitti, T.G., Gurwith, M.J. and Ronald, A.R. "Pharmacological Studies of Amoxycillin in Non-fasting adults" J. Infect. Dis. 129(1974): S 149 - S 153.

81. Hultberg, E.R. and Backelin, B. "Studies on the Absorption of Pivampicillin and Ampicillin" Scand. J. Infect. Dis. 4(1972) : 149-153.
82. Neu, H.C. "Antimicrobial Activity and Human Pharmacology of Amoxycillin" J. Infect. Dis. 129(1974) : S 123 - S 131.
83. Wagner, J.G. Linear Pharmacokinetic Models in Fundamentals of Clinical Pharmacokinetics, pp. 57-60, Drug Intelligence Publications, Inc., Hamilton, Illinois, 1975.
84. พรทิพย์ โล่ห์เลขา, "ค่าปกติของสารเคมีในเลือดจากกลุ่มอาสาสมัครไทย ตรวจโดยเครื่องกลอต์โนมิติ SMA II", ราชานิติเวชสาร ปีที่ 7 เล่มที่ 1, มกราคม-มีนาคม (2517) : 29-37.

APPENDIX A

Biochemical Laboratory Results

Test	Expected Range Units (84)	Results											
		Subjects											
		02	03	04	05	06	07	08	09	10	11	13	
Na <sup>+</sup>	135 - 147 mmol/L	133	137	138	138	135	148	142	135	134	136	140	
Ka <sup>+</sup>	3.6 - 4.6 mmol/L	3.8	5.2	4.0	4.1	4.1	4.6	4.5	4.3	4.7	3.9	4.6	
Cl <sup>-</sup>	101 - 111 mmol/L	98	106	106	107	106	105	112	109	103	106	109	
CO <sub>2</sub>	23 - 31 mmol/L	25	27	28	28	22	24	21	28	25	28	23	
A.P.F.	40 - 105 U/L	23	53	50	56	63	42	73	80	65	35	64	
LDH	140 - 310 U/L	190	296	208	187	308	231	335	291	489	245	339	
SGOT	5 - 40 U/L	22	32	20	21	21	20	26	23	20	7	27	
SGPT	5 - 35 U/L	25	21	13	8	27	27	22	6	7	8	9	
CPK	10 - 170 U/L	41	93	94	53	77	101	110	134	93	154	46	
T.P.	66 - 84 U/L	83.6	77.7	67.7	78.2	69.3	74.3	70.8	93.6	71.3	76.2	73.8	
ALB	42 - 52 g/L	49.0	48.0	50.8	47.9	54.0	50.7	54.6	42.2	45.4	48.1	45.1	

Continued

Test	Expected Range Units (84)	Results												
		02	03	04	05	06	07	08	09	10	11	13		
Ca <sup>++</sup>	8.8 - 10.0 mg/dl	9.2	8.9	8.7	8.9	8.6	9.2	9.0	9.0	8.8	9.5	9.0	9.0	
IN.P.	3.3 - 4.6 mg/dl	4.3	3.5	3.7	3.7	3.4	3.2	3.8	4.3	3.9	3.7	2.7	2.7	
GLU OX	60 - 95 mg/dl	63	93	86	87	72	98	63	71	77	82	84	84	
BUN	7 - 17 mg/dl	11	9	9	11	10	13	14	6	12	11	9	9	
CREA	0.6 - 1.2 mg/dl	1.0	0.8	1.0	0.7	1.0	1.0	1.3	0.6	0.8	0.9	0.7	0.7	
U.A. : M	4.4 - 8.1 mg/dl	5.5	-	6.4	-	4.4	7.0	6.1	-	-	-	-	-	
: F	3.5 - 6.1 mg/dl	-	6.1	-	5.2	-	-	-	2.1	5.3	3.9	3.5	3.5	
CHOL ENZ	110 - 270 mg/dl	227	190	190	161	203	196	184	248	259	208	148	148	
T. BILLI	0.2 - 1.20 mg/dl	0.6	0.5	1.0	0.9	0.8	0.7	1.0	0.5	0.6	1.0	0.8	0.8	
D. BILLI	0.1 - 0.5 mg/dl	0.4	0.2	0.2	0.3	0.2	0.2	0.4	0.2	0.5	0.4	0.2	0.2	
TRIG	30 - 190 mg/dl	91	62	55	51	73	-	29	53	65	83	70	70	

## APPENDIX B

In order to determine whether an observed set of data may be described by such a polyexponential equation, an operation called the method of residuals or stripping technique is performed. A good criterion to how well the stripping technique has been applied to a given set of data is to consider the coefficient of variation (C.V.) calculated from the estimated values and those measured experimentally. The smaller the value of C.V., the better the stripping technique has been applied (83). The estimate of C.V. could be illustrated by the following examples:



Table 22 Stripping Biexponentials from Set of the Mean Ampicillin Serum Concentrations of 14 Subjects after Oral Administration of Bacampicillin 400 mg, in fasting state.

Time (hr.)	Cobs. (mcg/ml)	$\hat{C}_t = 8.50 e^{-0.70t}$	$R_1 = C_{obs} - \hat{C}_t$	$\hat{R}_1 = 9.84 e^{-3.44t}$	Cpred = $\hat{C}_t - \hat{R}_1$	$\frac{C_{pred}}{C_{obs}} \times 100$
0	0	8.50	- 8.50	9.84	- 1.34	100.0
0.25	1.56	7.14	- 5.58	4.16	2.98	191.03
0.5	4.48	6.00	- 1.52	1.76	4.24	94.64
0.75	5.41	5.04	-	0.74	4.30	79.48
1.0	5.03	4.24	-	0.31	3.93	78.13
1.5	3.34	2.99	-	0.06	2.93	87.72
2.0	1.90	2.11	-	0.01	2.10	110.53
3.0	0.79	1.05	-	0.0003	1.05	133.59
6.0	0.11	0.13	-	0	0.13	118.18
8.0	0.04	0.03	-	0	0.03	75.0

Mean = 106.83

S.D. = 35.11

C.V. =  $\frac{35.11}{106.83} = 0.3286$

Continued

Cobs represents the mean ampicillin serum concentrations of 14 subjects obtained experimentally after oral administration of bacampicillin 400 mg in fasting state

Cpred is the mean ampicillin serum concentrations of 14 subjects after oral administration of bacampicillin 400 mg calculated by applying the stripping technique to an observed data set.

$$\textcircled{1} \quad \hat{C}_t = 8.5037 e^{-0.6966t} \quad (r = -0.9952)$$

$$\textcircled{2} \quad \hat{R}_1 = 9.8424 e^{-3.4427t} \quad (r = -0.9591)$$

Hence,  $C_{pred} = 8.5037 e^{-0.6966t} - 9.8424 e^{-3.4427t}$

Table 23 Stripping Three Exponentials from Set of the Mean Ampicillin Serum Concentrations of  
 14 Subjects after Oral Administration of Bacampicillin 400 mg in fasting state

Time (hr.)	Cobs (mcg/ml)	$\hat{C}_t = 4.54 e^{-0.60t}$	$R_1 = Cobs - \hat{C}_t$	$\hat{R}_1 = 7.96 e^{-1.27t}$	$R_2 = R_1 - \hat{R}_1$	$\hat{R}_2 = 13.67 e^{-2.79t}$	$Cpred = \hat{C}_t + \hat{R}_1 - \hat{R}_2$	$\frac{Cpred}{Cobs} \times 100$
0	0	4.54	- 4.54	7.96	- 12.50	13.67	- 1.17	100.0
0.25	1.56	3.91	- 2.35	5.80	- 8.15	6.81	2.90	185.90
0.5	4.48	3.36	1.12	4.22	- 3.10	3.39	4.19	93.53
0.75	5.41	2.89	2.52	3.07		1.69	4.27	78.93
1.0	5.03	2.49	2.54	2.23		0.84	3.88	77.14
1.5	3.34	1.84	1.50	1.18		0.21	2.81	84.13
2.0	1.90	1.37	0.53	0.63		0.05	1.95	102.63
3.0	0.79	0.75		0.18		0.003	0.93	118.32
6.0	0.11	0.12		0.004		0	0.11	100.0
8.0	0.04	0.04		0		0	0.04	100.0

Mean = 104.06  
 S.D. = 31.30  
 C.V. =  $\frac{31.30}{104.06}$   
 = 0.3006

Continued

C<sub>obs</sub> represents the mean ampicillin serum concentrations of 14 subjects obtained experimentally after oral administration of bacampicillin 400 mg in fasting state

C<sub>pred</sub> is the mean ampicillin serum concentrations of 14 subjects after oral administration of bacampicillin 400 mg calculated by applying the stripping technique to an observed data set

$$C_t = 4.5403 e^{-0.6003t} \quad (r = -0.9977)$$

$$\hat{R}_1 = 7.9638 e^{-1.2709t} \quad (r = -0.9561)$$

$$\hat{R}_2 = 13.6740 e^{-2.7887t} \quad (r = -0.9760)$$

$$\text{Hence, } C_{\text{pred}} = 4.5403 e^{-0.6003t} + 7.9638 e^{-1.2709t} - 13.6740 e^{-2.7887t}$$

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