

Technical Bulletin

Boehringer Ingelheim
Vetmedica, Inc.

Pharmacokinetics for BIO-MYCIN[®] 200 vs. Liquamycin[®] LA-200[®] Serum Profiles following Sub-Q Administration

Study Design

Investigator	Kelly Lechtenberg, DVM, PhD
Location	Midwest Veterinary Services, Oakland, NE
Data Analyst	Mike Apley, DVM, PhD, Diplomate ACVCP Iowa State University, Ames, Iowa
Completion date	January 1998
Number of calves	16
Type	Healthy crossbred beef calves
Weight	422-755 lbs (192-342 kg)
Housing	A single, naturally ventilated facility
Treatment groups	(1) BIO-MYCIN [®] 200 oxytetracycline injection (2) Liquamycin [®] LA-200 [®] oxytetracycline injection
Treatment group assignments	To achieve evenly distributed body weights between treatment groups, calves were ranked by weight then assigned to a group Each group was assigned four male and four female calves
Administration method	Sub-Q on the side of the neck using the tenting technique
Dosage	9.0 mg/lb (20 mg/kg) with no more than 10 mL per injection site
Samples	Blood samples obtained prior to treatment, zero (0) hour, then at 0.5, 1, 2, 4, 6, 10, 16, 24, 36, 48, 60, 72, 84, 96, 108 hours following treatment
Sample Tests	Serum profile included C_{max} – maximum concentration observed T_{max} – time to maximum concentration AUC – area under the curve or total concentration of oxytetracycline from 0-108 hours

Results

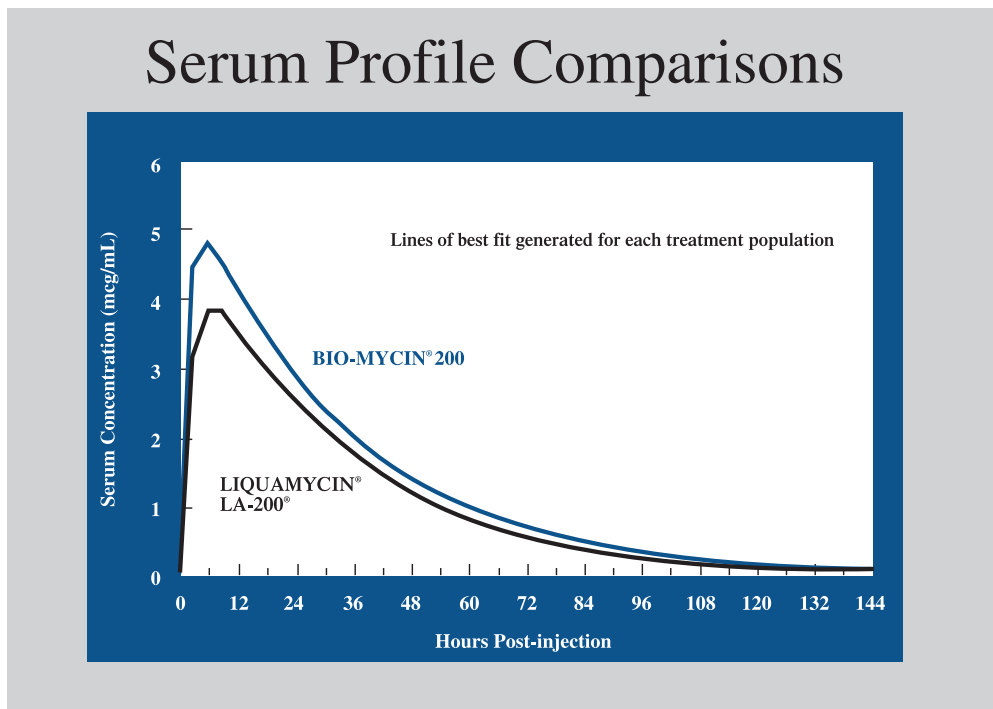
	BIO-MYCIN® 200	Liquamycin® LA-200®	
	Mean for Group	Mean for Group	Level of Significance
C _{max} observed (µg/mL)	4.895	3.696	P = .0065
T _{max} observed (hours)	7.3	8.5	P = .55 not significant
AUC 0-108 hrs (µg hr/mL)	177.76	142.89	P = .0003

Conclusions

The total area under the curve for serum concentration of oxytetracycline from 0-108 hours was greater for **BIO-MYCIN 200** and was statistically significant at the P = .0003 level. The maximum serum concentration for oxytetracycline was greatest for **BIO-MYCIN 200** and was statistically significant at the P = .0065 level.

Summary

BIO-MYCIN 200, administered Sub-Q, when compared to Liquamycin LA-200, administered Sub-Q, shows in this study a significantly higher maximum concentration of oxytetracycline. **BIO-MYCIN 200** also shows a significantly greater concentration for the 0 to 108 hours as represented by the total area under the curve.



Philip W. Widell, DVM