

# Bioavailability & Bioequivalence: BA/BE Studies Summit

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## Development of sustained release antifungal, anti-protozoa and antimicrobial products in horses using hydrogels and extended release formulations in veterinary medicine

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Therapies and compliance of treatment in horses and cattle are challenges for veterinarians and owners. The goal of our research team is to develop new antifungals and antimicrobials using appropriate hydrogels and other delivery systems. Voriconazole-hydrogel has been studied in an in-vitro model using the Franz Cell Diffusion apparatus and cadaver horse eye tissues. Drug levels in the cornea and sclera were measured. Formulations release the drug for up to 28 days above the minimum inhibitory concentration needed to treat most fungal eye infections. The next step is testing the product in horses. Other formulations that have been studied for efficacy and release time include gentamicin, vancomycin and amikacin-impregnated calcium sulfate and polymethylmetacrylate (PMMA) beads for successful treatment of osteomyelitis in dogs and horses and topical antiprotozoal drugs in cattle for *Trichomonas*. Indeed, successful alternatives are needed for ease of treatment in animals.

### Biography

Sue Hudson Duran is a Professor at Auburn College of Veterinary Medicine; Adjunct Professor Harrison School of Pharmacy; and GMP Pharmacist. As Education Chair of the International College of Veterinary Pharmacy, she developed teaching modules for pharmacists practicing veterinary pharmacy. She works with a team of scientists on development of new animal formulations for improvement in therapies. The team also develops human alternatives to antimicrobials such as anti-sera. She was a Consultant to the FDA and served on compounding and educational programs in Veterinary Medicine and was a member of the Center for Veterinary Medicine, and FDA Veterinary Medical Advisory Committee.

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