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The quality of blood sample collection for preclinical testing: A focus on rat tail bleeding method

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Constructing a pharmacokinetic profile of a drug is usually done by collecting multiple blood samples from animals. Such samples can be easily collected from large animals by vein punctures or simply by withdrawing blood using a suitable syringe. Conversely, collecting multiple blood samples from small exotic animals is considered difficult. Generally, tail cut bleeding and tail clipping methods for collecting repetitive blood samples are considered aggressive and associated with post recovery pain. Nevertheless, these methods are routinely conducted in veterinary clinics by well trained practitioners. However, special considerations and training must be undertaken when using these methods for drug discovery in order to reduce pain and stress associated with such techniques. Toe clipping, nail clipping and ear clipping are not acceptable in veterinary hospitals and will probably not produce diagnostic samples. Therefore, using these techniques in drug discovery is limited. On the other hand, tail bleeding methods are widely used and considered easy and less problematic to the practitioner. After acknowledging the advantages and disadvantages of collecting blood samples by tail bleeding methods it was important to test these methods in our laboratories to ensure its validity in drug pharmacokinetic studies and biological preclinical investigations.

Biography

Nidal A Qinna is an Associate Professor in Pharmacology and currently the Head of Pharmacology and Biomedical Sciences Department at University of Petra, Jordan. He has received his Doctorate (PhD) in Pharmacology in 2005 from the University of London, King's College London, UK. He is the holder of FELASA-C License for conducting research on laboratory animals and currently managing the Animal House Unit and University of Petra. His expertise and research interests include animal models of diseases, conducting safety and toxicity studies, structure activity relationships in drug discovery, in vivo pharmacokinetic and pharmacodynamics studies, drug interactions, protein drugs, ethnopharmcology and surgical animal models.

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