



Veterinary pharmacology: A world almost unexplored with huge potential

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Veterinary medicine and specifically veterinary pharmacology are taking on great importance all over the world (Giorgi, 2012). Pharmacology in companion and food producing animals has evolved enormously in the past 20 years with the development of new modalities of therapies, and novel active compounds. If from one side food producing animals are always more exploited to provide for increasing world food demand, from the other side animal welfare issues are now driven by animal activists, food companies, and consumers as well as food safety is strictly controlled by regulatory bodies (i.e., EFSA, FDA). Differently, companion animals are treated as members of the family and pet owners demand the same level of care, they expect for themselves. This change in attitude has resulted in a push for the development of more effective and innovative veterinary therapies (Pierini et al., 2020).

Despite massive progresses have been achieved in the veterinary field thanks to the pharmaceutical companies as well as independent scientists, this area is still behind the human medicine getting the “One Health One World” concept still far to be achieved. In addition, the improvements driven by the pharmaceutical companies are connected to the return of money that they can have and consequently their plans do not include minor species or problems that potentially do not lead to a good economic profit. Thus, the support of independent scientists results of paramount importance in order to expand the knowledges even in niche areas of the veterinary field. Recent examples of that have been reported in geese (Sartini et al., 2020a, 2020b, 2021a, 2021b, 2021c, 2022b) and crocodiles (Poapolathep et al., 2017; 2020a, 2020b, 2020c, 2020d, 2022a, 2022b) both considered minor species at global level. A long series of drugs have been tested by independent scientists introducing new important data in animals that have been ignored so far. The use of a drug in a specific animal species is appropriate when based on specific studies on that animal species. The extrapolation of pharmacodynamics, pharmacokinetics and safety profile from other species,

even if very closely related, can lead to lack of efficacy or side effects, among other undesired effects.

In the last years the attention on the pharmacology application of system models and the innovations in analytical and descriptive techniques used to handle massive data including mathematical and computational approaches have been increased. In the light of this, this special issue aims to accept and promote challenges in the development and application of new systems pharmacology models to overcome future challenges in drug discovery and development research, to predict the effect of drug treatment in vivo, in health and disease animals

As guest editors of this special issue in Veterinary Pharmacology we encourage mutual beneficial research between pharmaceutical companies and independent scientists because still important questions need to be answered. The prospective findings from these studies are potentially terrific for both animals and humans. We hope to read many interesting manuscripts in this issue as well as in Veterinary and Animal Science.

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