

Quinapyraminesulphate-loaded nanoformulation

Technology Details:

Trypanosomiasis caused by *Trypanosoma evansi* (Surra) has been recorded worldwide and is a major constraint to livestock productivity in Asia, Africa and South America. This disease has a significant impact on the mortality rates of livestock across the world. The disease has also a major economic impact in India. It affects a wide range of domestic and wild animals. The quinapyramine sulfate is a recommended trypanocidal drug, but also entails untoward side-effects when administered for therapeutic purpose. We have formulated nano based delivery system for trypanocidalquinapyraminesulphate drug. Two Nanoformulations of quinapyraminesulphate loaded polymeric nanoparticles) were synthesized. The QS-NPs were highly effective against parasite *Trypanosoma evansi* and shown to kill the parasites at much lower concentrations *in vitro* as well as *in vivo* in mice and rabbit model. The QS-NPs were found to be non-toxic, bio-compatible, bio-degradable, and physico-chemically stable and highly effective against parasite *T. evansi* in lab animal models at much reduced dose. QS-NPs were safe at effective trypanocidal doses and even at doses several times higher than the effective dose and have a potential for clinical trials in large animals.

We have been granted an Indian Patent for nanodelivery of quinapyraminesulphate.

Salient points

- The dose of quinapyramine sulphate and frequency of administration is reduced
- Reduces the unwanted side effects, hence increasing patient compliance.
- Provides maximum therapeutic activity by preventing drug degradation during transit.
- Allow sustained release of drug.
- The levels are maintained within the therapeutic window effective for a long period till the system continues to deliver the drug at a particular rate which may provide various advantages *viz.* reduced blood level fluctuations, minimize drug accumulation, improve patient compliance, and minimize local and systemic side effects.
- With reduction of amount of drug, the cost of quinapyramine sulphate per dose is also reduced.
- It is nontoxic, biocompatible, biodegradable, and physicochemically stable.

- **Indian Patent Granted for “Nanodelivery of quinapyramine sulphate”** for two processes and two products. The invention relates to a novel drug delivery system for quinapyramine sulphate in form of nano-particle formulation. The invention provides polymer based quinapyramine sulphate-loaded nano-particles. (Total claims: 22).

We seek collaboration of the desired companies for scale up production and its evaluation in large animals.

Licensing terms

- Nature of License: Non-exclusive
- Duration of the License: 10 years
- License fee:
 - Territory of India: ₹ 2.0 lakh + applicable taxes with 5 % royalty on net-invoice value + applicable taxes
 - Territory of Overseas: USD 8,000 (or an equivalent amount in INR)+ applicable taxes
- Training support: Up to 3 Persons nominated by the licensee shall be trained for the period up to 5 days. The cost of training to be imparted by the institute is included in the licensing fee. The expenses for boarding and lodging and travel of the licensee personnel shall be borne by the licensee.
- All statutory compliances related to production, sales, transportation, storage and performance of the product in the field to be fulfilled by the licensee.
- 10% concession can be given to a company that is buying both the formulations, in one go on total License Fee.