

Long-acting Injectable Technology

Unmet Need

Poor medication adherence is a serious issue globally, affecting half of the patient population, and is associated with significant cost to the healthcare systems, both in human and animals.

Background

Long-acting injectable (LAI) provides an adjustable controlled and continuous release of the drug and biologics (including antibodies, proteins, and peptides) over several days to months to achieve the targeted drug concentration. The most common routes of administration for LAI are intramuscular (IM), subcutaneous (SC), and less commonly, intravenous (IV), intraocular, implant, and intra-articular routes.

Our Approach

- Lipid-based systems: Oily solutions and/or suspension, lipid-based nanoparticles, liposomal systems
- Polymeric barriers: in-situ gels, nano/microparticles
- Drug crystal suspension: powder for suspension, pre-filled syringes, ready to use suspension

Benefits

- Improved patient adherence and compliance by reduced dosing frequency
- Minimize the systemic side effects caused due to fluctuating drug concentrations in the blood
- Improved systemic availability by avoidance of the first-pass metabolism
- Overall reduction of cost

Competitive Advantages

In the area of LAI, PIDG has established global leadership as a preferred integrated partner due to access to the world-class expertise, well-equipped facilities and extensive knowledge of regulatory approved technologies and excipients.

Success story

PIDG has developed a long-acting intramuscular formulation of the highly unstable drug Omeprazole, which is revolutionizing the treatment of equine gastric ulcers. Gastric ulcers are an extremely prevalent and medically important condition in horses. With over 250,000 horses in Australia, and over 10,000,000 horses in the USA, this product has extraordinary commercial potential. The product can be administered far more easily than others on the market and has been tested in over 10,000 horses.

Publication

Sykes, B. W., K. Kathawala, Y. Song, S. Garg, S. W. Page, C. Underwood and P. C. Mills (2017). "Preliminary investigations into a novel, long-acting, injectable, intramuscular formulation of omeprazole in the horse." Equine Vet J 49(6): 795-801.

Patent

Bova, N., S. Garg and S. Page (2016). Methods and compositions for treating gastric ulcers.

Potential Areas

Neurodegenerative diseases including Alzheimer disease, psychotic disorders including schizophrenia, infectious diseases including HIV, tuberculosis, and viral hepatitis; chronic pain management, diabetes, cardiovascular diseases, cancer and substance abuse management