

TECH OFFER

A Novel Elongate Microparticle (Emp)-Based Bioactive Delivery System



KEY INFORMATION

TECHNOLOGY CATEGORY:

Chemicals - Bio-based

Healthcare - Pharmaceuticals & Therapeutics

TECHNOLOGY READINESS LEVEL (TRL): **TRL4**

COUNTRY: **AUSTRALIA**

ID NUMBER: **TO174675**

OVERVIEW

Drugs delivered orally are often degraded in the gastrointestinal (GI) tract and the liver, lowering their efficacy. Cutaneous drug delivery offers an alternative as it circumvents the GI tract and liver. It can also be advantageous for skin-related diseases such as skin cancers and acne. The key challenge however, is to penetrate the epidermal layers.

Several approaches are being developed for cutaneous drug delivery. First, micro-needles deliver drugs by physically disrupting the skin. However, the efficiency is greatly influenced by the physical characteristics of the needles and tissue. Second, liposome-based methods use particles called liposomes to encapsulate drugs. This requires separate mechanisms, such as sonophoresis, to disrupt the skin and allow drug penetration.

The current technology, Foroderm™ comprises a painless, low cost and safe bioactive delivery system. The technology owner is interested in licensing and co-development activities in various application fields.

TECHNOLOGY FEATURES & SPECIFICATIONS

Foroderm™ is a unique drug delivery platform that uses novel elongate microparticles (EMP) for the cutaneous delivery of a wide range of drug payloads including: small molecules, peptides, proteins, nanoparticles, vaccines, nutraceuticals and cosmetics. The microparticles are not attached to any solid support, as in micro-needles, allowing application to large areas of skin. Penetration of the stratum corneum by the microparticles creates pathways for delivery. Foroderm™ can also be used to deliver bioactive agents to mucosal surfaces; or added directly to existing topical formulations (solutions, gels, cream, ointments etc).

POTENTIAL APPLICATIONS

Foroderm™ has a wide range of potential applications:

- Delivery of drugs for skin conditions and cosmeceuticals (e.g. treatments for actinic keratosis or psoriasis)
- Delivery of vaccines
- Delivery of pain-related therapeutics (e.g. lower back pain, osteoarthritic pain, post-herpetic pain)
- Animal health (e.g. herd vaccination)

UNIQUE VALUE PROPOSITION

- Painless application by gentle massage
- Can be added to a range of existing formulations including ointments, solutions, creams and gels
- Low cost manufacture at high volume
- Microparticles are removed within approximately a three-week period via natural turnover of the skin