Pharmaceutica-2013
3rd International Conference and Exhibition on
Pharmaceutics & Novel Drug Delivery Systems
April 8-10, 2013 Hilton Chicago/Northbrook, USA

# Ethicap Gel – Proprietary microencapsulation technology that facilitates solubility and bioavailability enhancement, drug combinations, controlled drug release including pulsatile delivery and multiple finished forms

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## Abstract

The Ethicap® Gel or Spherex® technology is a highly precise system for the manufacture of seamless minicapsules that accommodates multiple options to address formulation challenges. The global pharmaceutical industry loses an estimated $564 billion annually due to medication non-adherence. Current strategies to improve pharmaceutical products focus on adding drug delivery functionality, such as patient-centric dosing, combination therapy and controlled-release options. Additionally, one of the biggest challenges currently facing the pharmaceutical and biotechnology industries is poor solubility of drugs. Microencapsulation technologies lead the field for advancing drug delivery. The Spherex technology can facilitate combination products, even with chemical incompatibilities and the minicapsules are the ideal substrate for coating due to the spherical shape and narrow size distribution. Multiparticulates are best used for modified release to achieve targeted, timed or pulsatile release of the drug (chronotherapy). Spherex is designed to enhance solubility and bioavailability, but is useful for all drug classes (BCS I to IV) and can achieve any target release profile. The Spherex technology has been applied to a range of compounds, including a poorly soluble drug, for which the solubility enhancement eliminated a dose excess as compared to the reference product, while attaining the target 24 hour profile. Spherex minicapsules have also been used for enteric protection of acid-labile drugs and is ideal for taste masking bitter compounds through the microencapsulation process itself and subsequent coating (if necessary). Minicapsules can be formulated into a variety of final dosage forms, including; capsules, sachets/stick packs, dispersions/suspensions and orodispersible and conventional tablets.

## Biograpgy

Joan FitzPatrick completed her Masters in Pharmaceutics in Trinity College, Dublin and has almost 20 years experience in the pharmaceutical industry primarily in R&D roles working with novel drug delivery technologies. She is a Qualified Person (QP) with extensive regulatory experience from both industry and regulatory authority (Irish Medicines Board). Joan's current position is Director of Business Development and Scientific Affairs at Freund Pharmatec Ltd., a drug delivery company with patented microencapsulation technologies (subsidiary of Freund Corporation; publicly quoted company headquartered in Tokyo Japan). She has 2 publications in reputable journals and 4 patents and also acts as a technical assessor for Irish government agencies.