

COMPANY FACT SHEET

Business

PolyTherics is a UK-based company that has developed proprietary PEGylation technologies to site-specifically PEGylate *any* therapeutic protein or peptide. Proteins are usually cleared from the body very quickly. This reduces their efficacy. Safety can be compromised because the frequency of dosing is increased, thereby increasing the potential for immunogenicity and side effects. An increased frequency of dosing also results in an increased cost of treatment. PEGylation is proven for many classes of proteins to safely extend their duration of action. Our site-specific PEGylation technologies yield a more homogeneous product and are more cost-effective than traditional PEGylation technologies.

Commercial potential

Large growing markets exist for protein drugs with global sales expected to grow to \$160.1 B in 2013. Many novel proteins and peptides are in development and most will require modification to extend their duration of action. Many proteins are coming off patent creating opportunities for 2nd generation biobetter products.

Strategy

PolyTherics is applying its PEGylation technologies to produce its own **biobetter protein drugs** (interferon alpha and beta, and erythropoetin). The Company intends to license these products for further development and commercialisation prior to clinical development.

The Company also uses its technologies to PEGylates known and **novel proteins and peptides** being developed by other organisations. Initially a funded feasibility study under a research licence is conducted to ensure success. Following a successful feasibility study, the third party can licence the best PEGylation technology for use with specific proteins.

PolyTherics expects to receive upfront licence fees, milestone payments and royalties on sales of licensed biobetter products and products developed and commercialised using its technologies; PolyTherics has already received upfront fees and milestone payments from ongoing collaborations.

Revenues received from feasibility studies, licence fees and milestones, plus grant-funding, are used by the Company to further develop and validate its technologies while **broadening its intellectual property**.

Company history

In 2005 PolyTherics began to focus the majority of its efforts to develop its PEGylation technologies. PolyTherics currently has 3 broad technologies for site-specific PEGylation that can be used for any protein or peptide. These technologies are also being developed to produce different protein formats (e.g. bispecifics and protein-drug conjugates). Two co-founders remain part of the management team while the CEO, COO, Development Director and head of Business Development have a broad range of collective expertise and experience in biotechnology product development and commercialisation.

Technologies

TheraPEG™ - PEGylation across one or more disulfide bonds naturally present in a protein

HiPEG™ - PEGylation at a histidine tag that is expressed at one or both ends of a protein or peptide

CyPEG™ - PEGylation at the thiol group of free cysteine within a protein or peptide

Funding history

Seed funding provided by The Wellcome Trust, BBSF and Imperial Innovations in Aug 2002 (£0.75m). **Investment** by Imperial Innovations Group plc, Longbow Capital, and The Capital Fund in June 2007 (£2.3m) and Feb 2010 (£3m). **Grants include** (i) Technology Strategy Board projects with Glycoform and Aston University in 2008, with Avecia in 2007, with Aracor and with Isogenica in 2009, and for in-house research on enzyme chemoassembly in 2010, and (ii) EUREKA Eurostars with Zealand Pharma in 2010.

Commercial agreements

2010: Celtic Pharma

2009: Minapharm Pharmaceuticals
Celtic Pharma

2008: Alligator Biosciences
Biocompatibles

2007: Biovectra

2005: Shantha Biotech

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