

# Media Coverage

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## AusBiotech 2010 Biotech Profile: Starpharma

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David Binning (Australian Life Scientist)

In an industry obsessed with finding the next big blockbuster, Melbourne-based Starpharma is using its technology platform to steadily accumulate wins in a broad range of markets.

Originally developed by the CSIRO's molecular research institute, Starpharma's dendrimer nanotechnology platform has seen the company sign licensing and co-development agreements with some of the world's largest pharmaceutical and medical technology companies, including Eli Lilly, Elanco and GlaxoSmithKline (GSK). In addition to developing new product pipelines, many of these companies are now applying Starpharma's technology towards improving the efficacy of existing products.

"We are looking at using the dendrimer as a scaffold to which we attach someone else's drug to improve its performance," says Starpharma CEO, Dr Jackie Fairley. "This is something that is a very important value driver for the company moving forward."

Starpharma's dendrimer platform was recently applied to increase the solubility of cancer drug paclitaxel, while another leading cancer drug, doxorubicin, has seen its toxicity levels reduced and its efficacy increased. It is envisaged that the technology could be applied to improve a wide range of current and future drugs in numerous ways, including making them persist longer in the body.

In addition to its dendrimer technology products, Starpharma also derives revenues from its Stratus CS cardiac marker diagnostic, licensed to Siemens Healthcare, its gene transfection technology, SuperFect, licensed to Qiagen, while its siRNA and DNA transfection reagents are licensed to EMA Merck.

Ironically, for a company that eschews the blockbuster business model, Starpharma is itself close to possessing that most cherished prize. The company's lead product, a microbicide called VivaGel, is garnering serious attention globally for its potential to affect a major reduction in the incidences of sexually transmitted infections (STIs), in particular HIV AIDS and genital herpes. The product is currently advancing through clinical development with the FDA recently granting the product 'fast-track' status.

While the social and economic costs of the global HIV pandemic are well known, genital herpes is less understood. In the US, around 26 per cent of all women are infected with genital herpes, while for African American women the figure is an alarming 50 per cent.

The disease is an enormous drain on health systems throughout the developed world, both in terms of the life-long costs of medications and professional attention required to treat it, as well as its contribution to a range of other health problems. For instance, genital herpes is one of the main reasons for women being forced to give birth via caesarean. Fairley notes that genital herpes was estimated to be costing around US\$1.6 billion a year in the US several years ago, and that the figure is likely to be considerably higher now.

Starpharma recently received a grant of US\$26 million from the US National Institutes of Health (NIH) to progress the development of VivaGel to combat HIV, in addition to separate funding to develop VivaGel against genital herpes.

Starpharma is eyeing a number of additional markets for VivaGel. Recently it commenced a Phase II study to examine its effectiveness in both the prevention and treatment of bacterial vaginosis (BV), a

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market currently estimated to be worth around \$US350 million. BV is the most common cause of vaginal infection, and Fairley says that the market is severely underserved with current treatments creating a number of undesirable side effects.

Starpharma is also working with Durex to deliver VivaGel as a coating for condoms, in a deal which could be worth as much as \$US100 million. The company notes that this provides a fairly clear path to market with the first royalties expected to be generated some time next year. All up, Fairley says that VivaGel is targeting a market potentially worth \$US6 billion a year. "There's no question that a topical microbicide cover for HIV and genital herpes is a huge commercial opportunity."

Fairley stresses, however, that human life sciences represents just one of several markets where the company is hoping to sell its technology. Others include animal health, water purification, inks and coatings as well as agricultural chemicals. Late last year, Starpharma signed a large deal with a leading US agricultural chemicals company, and expects to sign further deals in this space, a market currently estimated to be worth around \$US35.8 billion.

The US is a key market for Starpharma, and it is working closely with its fully-owned subsidiary, Dendritic Nanotechnologies Inc, towards expanding its potential products across the life sciences and industrial markets, with the company noting that several of these products have near-term cash-flow opportunities.