

Shareholder Update: January 2008

Welcome to this edition of Starpharma's investor update, a periodic newsletter designed to keep shareholders informed about recent developments.

This issue provides an update of our achievements for the quarter, which included the signing of a significant co-development agreement with SSL International plc to coat Durex[®] condoms with VivaGel[®].



New application of VivaGel® as a condom coating

The active ingredient of VivaGel[®], SPL7013, has been shown in animal models to possess microbicidal and potent contraceptive properties. The clinical development of VivaGel[®] as a stand-alone microbicidal gel for the prevention of infection with the viruses that cause genital herpes (HSV-2) and AIDS (HIV) is well established.

Now, Starpharma is also advancing a second commercialisation program for VivaGel[®] as a condom coating, which may have a shorter time to market than the microbicidal gel due to a potentially simpler regulatory path for condoms compared with pharmaceuticals.

In October 2007, Starpharma signed a codevelopment agreement with UK-based SSL International plc (LSE: SSL) the owners of Durex[®], the world's leading condom brand. SSL holds approximately one third of the global market share for branded condom sales. SSL has sales in more than 100 countries and is the world's largest manufacturer and seller of branded condoms. In 2005, global condom retail sales were almost \$3.2 billion.

This deal, when combined with Starpharma's previous condom coating deal announced earlier in the year, offers Starpharma global coverage for this application of VivaGel[®].

Starpharma considers SSL a highly desirable partner for condom coatings: SSL has a large condom franchise and valuable experience taking differentiated condoms to the market. Starpharma also values SSL's social marketing program for condoms.

Undisclosed fees are payable to Starpharma under the SSL agreement, which also provides for the commencement of regulatory and market development activities by the two parties. The idea of introducing extra functionality into condoms is not new. Since the late 80s, the spermicidal compound Nonoxynol 9 (N-9) has been widely used as a coating to enhance condoms. Early suggestions that N-9 was also effective in preventing the transmission of sexually transmitted infections, including HIV, have been refuted by subsequent clinical data. N-9 may in fact increase the transmission of HIV.

Based on the new data, the US Food and Drug Administration (FDA) formally ruled in December 2007 that N-9 does not protect against HIV (see News in Brief), a ruling that supports the continued development of other condom coatings such as VivaGel[®] for the prevention of sexually transmitted disease.

There is global demand by condom manufacturers for premium products that offer good margins and strong differentiation. The VivaGel® condom coating is also an opportunity for Starpharma to establish multiple commercial applications of its microbicide technology.

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Arterial Disease Detection Agent

With Melbourne's Baker Heart Research Institute, Starpharma is exploring the use of targeted dendrimers to diagnose vascular disease at an early stage.

The collaborative research project uses a number of antibodies developed by researchers at the Baker, which are coupled to Starpharma's dendrimers and allow targeting of unstable plaques in diseased arterial walls (and the blood clots which form on these that can cause heart attacks and strokes). The highly branched dendrimer structure also allows for the inclusion of a contrast reagent, such as gadolinium used commonly in Magnetic Resonance Imaging (MRI).

The principal current method for detecting vascular disease is X-ray angiography, which is highly invasive and whilst identifying narrowing of arteries, does not recognise unstable atherosclerotic plaques that may rupture, resulting in a heart attack or stroke.

Heart attacks and strokes account for about 20 percent of deaths in Australia.

The joint project application received funding of \$327,000 in the 2007 round of National Health and Medical Research Council (NHMRC) development grants.

Previously, Starpharma announced a similar project that received \$810,000 from the US National Cancer Institute for the development of a diagnostic using a targeting protein specific for ovarian cancer. Success in this collaborative project will deliver three potential benefits. It will provide a technique for which there is an urgent need in cardiac medicine. It will also provide proof-of-principle for other dendrimer-based imaging applications and a basis for exploring the possibility of using dendrimers for the targeted delivery of small molecule drugs.



Figure 1. A thrombus detected by MRI in the laboratory ("in vitro") using the Baker Institute's antibody as the Targeting Protein for the dendrimer complex (the bright line demarcates the surface of the thrombus).



Figure 2. The result of a "control" experiment in which the dendrimer and targeting protein were not connected via a linker, but added separately to the tube. The gadolinium-loaded dendrimer alone does not bind to the thrombus, demonstrating that the

MRI-enhancing process shown in Figure 1 was a specific, targeted effect, as intended.



Dendrimers for the delivery of dermatological agents

In December 2007, Starpharma announced the signing of a collaborative research agreement with Stiefel Laboratories, Inc. the world's largest independent pharmaceutical company that specialises in dermatology.

Stiefel markets products in more than 100 countries around the world. The agreement is Starpharma's first co-development agreement for the use of its dendrimers

for the delivery of dermal therapeutics to improve their effectiveness and tolerability.

Under the terms of the agreement, Starpharma will receive payments on achieving certain technical milestones on the path to creating a potential new dendrimer-based dermatology product.

In addition to being an excellent development partner, Stiefel has the market strength to provide a straightforward route to market for technology arising out of this collaboration.

News in brief:

FDA ruling on N-9 supports Starpharma's strategy for condom application for VivaGel[®]

In December, the US FDA introduced a ruling that requires the makers of certain contraceptive gels, foams, films and inserts to carry a warning that the products do not protect against sexually transmitted diseases, including AIDS. It will be required for many over-the-counter spermicidal products that contain N-9. It has been shown that N-9 can cause irritation of the vagina or rectum and thereby increase the possible sites of entry for a virus, such as HIV, into the body.

Study SPL7013-004: Enrollment and Follow-up Completed

Enrollment and follow-up has been successfully completed and data analysis is currently underway in study SPL7013-004, another NIAID (National Institute of Allergy and Infectious Diseases) funded expanded safety study of VivaGel[®].

This trial was conducted in sexually abstinent women in San Francisco, California, USA, and Kisumu, Kenya.

During the trial, routine interim safety reviews identified no emergent pattern of product-related adverse events or participant withdrawals from the study. Full results from this study are expected in quarter 1, 2008.

Extension of patent life for VivaGel[®] in Europe

In December 2007, the European Patent Office advised Starpharma that its European patent application for the use of SPL7013 for the prevention and treatment of sexually transmitted diseases (based on PCT application published as W02/079299) has been accepted.

The acceptance extends the patent life in Europe to at least 2022 with the potential for a further extension up to five years under the European pharmaceutical extension scheme.

International Award for VivaGel®

In November 2007, Starpharma received a Nano 50[™] Award for VivaGel[®] in the Product Category, recognising significant current or near-term commercial applications for nanotechnology.

These awards recognise the top 50 international, products and innovators that have significantly impacted (or are expected to impact) the state of the art in nanotechnology.

Dendrimers to improve drug and cosmetic compound properties

Dendrimers can greatly improve the water solubility of water-insoluble compounds for pharmaceutical and cosmetic industries.



Many pharmaceutical companies discover new drugs with therapeutic potential, but are unable to formulate them as effective drugs, due to solubility problems which limit their application. Likewise many cosmetic companies also have novel ingredients that have solubility problems. Combining certain dendrimers with these new drugs and ingredients overcome many of the formulation problems.

As an example, dendrimers in combination with vitamin D (usually highly insoluble in water) dramatically enhances its water solubility by about 1000 fold. This greatly increases the number of formulation strategies applicable to Vitamin D.

Starpharma has an active research program and several industrial collaborations in place looking at using dendrimers to solve the formulation problems associated with specific therapeutic compounds and cosmetic ingredients.

About Starpharma

Starpharma Holdings Limited (ASX:SPL, OTCQX:SPHRY) is a world leader in the development of dendrimer nanotechnology for pharmaceutical, life science and other applications. SPL is principally composed of two operating companies, Starpharma Pty Ltd in Melbourne, Australia and Dendritic Nanotechnologies, Inc. in Michigan, USA.

Products based on SPL's dendrimer technology are already on the market as diagnostic elements and laboratory reagents.

The company's lead pharmaceutical product is VivaGel® (SPL7013 Gel), a vaginal microbicide designed to prevent the transmission of sexually transmitted infections, including HIV and genital herpes.

Further information

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