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# SHAREHOLDER Update

MAY 2013



## >> Progressing to Phase 3 studies of VivaGel® as preventive for recurrent BV

Recent positive Phase 2 study results assessing VivaGel® as a preventive for recurrent bacterial vaginosis (R-BV) have affirmed the favorable outlook for VivaGel® in BV. The deal-making environment, and demand, for novel BV therapeutics also remains strong and provides further impetus as the Company progresses to Phase 3 trials based on the positive Phase 2 results it received in April.

### Positive results

The Phase 2 exploratory trial demonstrated that 1% VivaGel® both reduced risk of recurrent BV and delayed time to first recurrence. The clinical benefits of VivaGel® were clear with more than 80% of women who administered the 1% VivaGel® formulation remaining BV free at 16 weeks (the end of the product use period) and high patient satisfaction was also reported. In keeping with earlier trials, VivaGel® was seen to be safe and well tolerated over the 16 week period.

R-BV is a condition for which there is currently no alternative other than unproven remedies or repeated dosing with antibiotics leading to resistance and unpleasant side effects. If the level of risk reduction observed with VivaGel® was applied to the wider population, it is estimated that at least ten million cases of BV could be prevented annually in the US alone.

### Analyst response

Healthcare analysts have responded positively to the Phase 2 trial results by either affirming or upgrading their recommendations (see chart on Page 2). All indicate price targets which represent significant upside in terms of expected near-term share price appreciation (average price target of \$1.69).

### Commercial environment

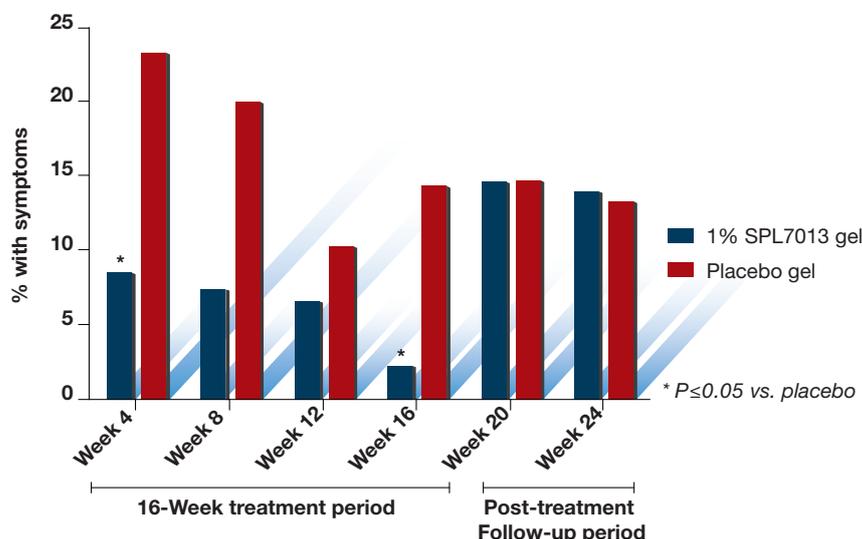
The level of commercial interest seen by Starpharma also reflects a strong deal-making environment for bacterial vaginosis. In May, drug maker Actavis signed a US\$55 million deal to secure global distribution rights for an antibiotic gel being developed for acute BV treatment (not R-BV) by Valeant Pharmaceuticals International.

This deal, while not competitive with VivaGel®, provides important insights into the value of the VivaGel® opportunity and demands for products in the BV space.

*"I am very encouraged by the data for 1% VivaGel®. In this group of women, almost all would have been expected to experience recurrent BV during the study. However, more than 80% of VivaGel® users remained BV free at 16 weeks. Given there are no other approved products for recurrent BV, I see this finding as highly promising – both for the management of women with this often difficult chronic condition and for recurrent BV sufferers."*

Professor George Kinghorn, OBE, Clinical Director at NIHR Clinical Research Network, Department of Genitourinary Medicine, Royal Hallamshire and Sheffield Teaching Hospitals, UK, and expert clinical advisor to the program.

Subject reported BV symptoms since last visit



## VIVAGEL®

### >> Progressing to Phase 3 studies of VivaGel® as preventive for recurrent BVs

(continued from page 1)

Whereas Valeant's gel contains a low-margin generic antibiotic (metronidazole), and is seeking to enter the \$US350 million treatment market with multiple product rivals, VivaGel® is a novel BV therapy targeting the much larger prevention of R-BV market (estimated at more than \$US1 billion) where it would be the only approved treatment option.

The results of the VivaGel® Phase 2 prevention study came close to statistical significance in many instances and achieved significance on a number of measures. These results are very encouraging given this was a small and exploratory Phase 2 study designed primarily to inform Phase 3 clinical trial design, and when considered in context of the very supportive results showing a highly statistically significant cure of BV achieved at the End-Of-Treatment (EOT) and symptomatic relief data in the earlier Phase 3 study of VivaGel® as a BV treatment.

Information gained from the Phase 2 prevention study is integral to the design of pivotal Phase 3 clinical studies expected to commence later this year. The Company is also investigating additional indications for VivaGel® – such as symptomatic relief – and these investigations are progressing positively.

### >> VivaGel® active (SPL7013) shows potential as novel treatment for viral conjunctivitis

Starpharma has identified the active in VivaGel® SPL7013 has potential as a novel therapeutic for viral conjunctivitis, a common eye complaint for which there is no cure and the market opportunity is assessed at \$US700 million.

The Company's pre-clinical studies have demonstrated the potent anti-viral effect of SPL7013 against important strains of adenovirus, which cause most cases of viral conjunctivitis.

Work is already underway to develop an SPL7013-containing ocular formulation, to support activities and ongoing dialogue with potential commercial partners.

"SPL7013 has the potential to be a first-in-class anti-viral therapy for viral conjunctivitis and feedback from potential partners and clinicians has been very encouraging," Starpharma CEO Dr Jackie Fairley said.

The appeal of the opportunity is enhanced by the advanced stage of development of SPL7013 as VivaGel® for bacterial vaginosis. This will minimise incremental costs, expedite development and boost attractiveness for commercial partners.

Current treatments for viral conjunctivitis are focussed on symptom relief, and the patient can remain infectious and symptomatic for several weeks. Currently curative treatments exist only for conjunctivitis with a bacterial cause.

### >> VivaGel®-coated condom

The VivaGel® coated condom product – already licensed to Ansell and Okamoto – is currently under regulatory review.

A range of pre-launch activities have been undertaken, including consumer research, product positioning, package design, and manufacturing validation.

## AGROCHEMICALS



### >> Starpharma signs collaborative agreement with Makhteshim Agan

Starpharma has signed an agreement with Makhteshim Agan, one of the world's leading manufacturers and distributors of branded off-patent crop and non-crop protection products.

Makhteshim Agan serves farmers in 120 countries and recorded global sales in 2012 of US\$2.83 billion.

The collaboration will see Starpharma's Priostar® dendrimers examined for potential application to novel crop protection formulations across Makhteshim Agan's extensive product portfolio. This will include three actives which each exceeded sales in 2011 of US\$400 million globally.

Specific terms of the agreement cannot be disclosed due to commercial confidentiality restrictions.

Makhteshim Agan operates in Australia as Farnoz.

#### Summary of analyst recommendations for Starpharma

| Analyst ratings  | Research at | Status/<br>recommendation | Target price                          | Price upside*                       |
|--|-------------|---------------------------|---------------------------------------|-------------------------------------|
|  <b>CIMB</b>            | 4-Apr-13    | Buy (Outperform)          | \$1.79                                | 101%                                |
| <b>NOMURA</b>  | 3-Apr-13    | Buy                       | \$1.69                                | 90%                                 |
| <b>CANACCORD</b> Genuity   | 5-Apr-13    | Buy                       | \$2.00                                | 125%                                |
| <b>BELL POTTER</b>   | 4-Apr-13    | Buy                       | \$1.58                                | 78%                                 |
|  <b>PhillipCapital</b>  | 4-Apr-13    | Buy                       | \$1.90                                | 113%                                |
|  <b>TAYLOR COLLISON</b> | 4-Apr-13    | Hold                      | \$1.15                                | 29%                                 |
| * Price upside based on closing at \$0.89 on 21/05/2013  |             |                           | <b>Average target price</b><br>\$1.69 | <b>Average price upside*</b><br>89% |

**DRUG DELIVERY**

**>> Dendrimer-doxorubicin improves anti-cancer drug in lung metastasis model**

Starpharma recently received more positive data showing how the Company’s dendrimers can improve the effectiveness of an anti-cancer drug.

In March, the Company announced the results of a study which assessed a dendrimer-enhanced version of doxorubicin as a treatment for the secondary tumours of breast cancer (metastases) in the lungs of rodents.

“Starpharma’s dendrimers appear to improve the effectiveness and performance of doxorubicin in a number

of important ways,” said Starpharma CEO Dr Jackie Fairley.

“Tolerability was improved allowing the drug to be delivered in a targeted way by direct lung administration, with improved anti-cancer effectiveness then seen as a result.”

Lung metastases of breast cancer are considered very difficult to treat. The mortality rate is approximately 85% within 5 years, and current treatments including doxorubicin can be considered palliative in nature.

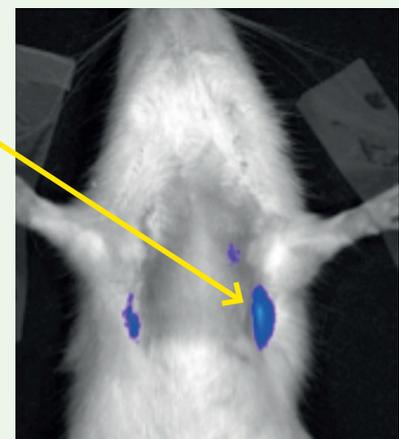
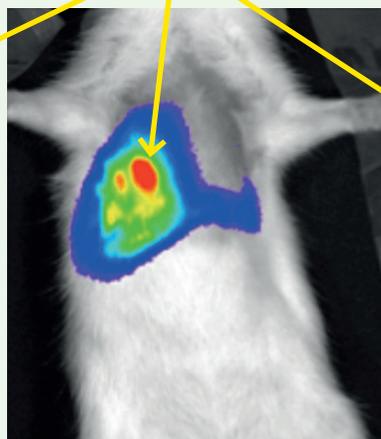
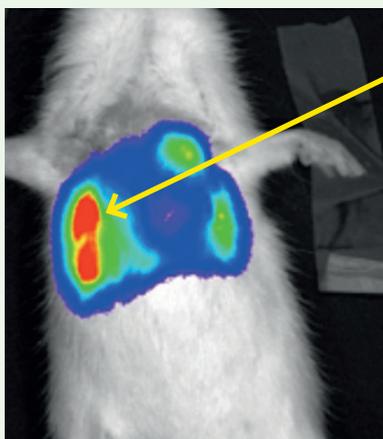
“Given the clinical management of lung metastases is an area of significant medical need, and current drugs often provide poor results, this finding has the potential to create a valuable and important application for Starpharma’s proprietary dendrimer formulations,” Dr Fairley said.

**Results: Figure 1** – Rats were dosed with breast cancer cells (Day 0). Treatment commenced at Day 7 with either saline (left panel), intravenous doxorubicin (centre panel), or intra-tracheal dendrimer-doxorubicin (right panel). At the end of the experiment (day 18-21) all rats were sacrificed and an assessment was made of their lung pathology and degree of metastasis using both visual inspection and bioluminescent imaging.

*Note: Results from intra-tracheal delivery of doxorubicin alone could not be generated as this route of administration proved too toxic for the drug in the absence of dendrimer.*

**FIGURE 1:**

DEGREE OF LUMINESCENCE INDICATES THE EXTENT OF TUMOUR TISSUE WITHIN THE RAT’S LUNGS



**LUNGS  
SALINE CONTROL**



**LUNGS  
INTRAVENOUS DOXORUBICIN  
(NO DENDRIMER)**



**LUNGS  
INTRATRACHEAL (IT)  
DENDRIMER-DOXORUBICIN**

**GLOBAL MARKET**


## >> New patents strengthen drug delivery opportunity

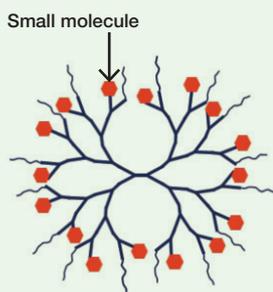
Starpharma has secured three additional US patents, which provide “composition of matter” and other broad protection for the Company's dendrimers as applied to drug delivery. These patents are current to 2029.

A fourth new, and similarly broad, patent has been also been allowed by China's patent office. This patent will run until 2027.

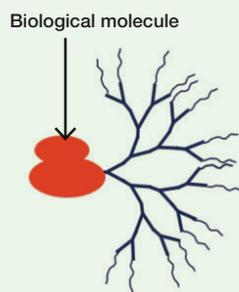
These patents provide broad protection around use of dendrimers to improve performance of pharmaceuticals – including applications that improve drug efficacy, reduce toxicity, improve solubility, extend drug half-life and target pharmaceuticals to specific cells or tissues.

These protections apply to dendrimer applications across a wide range of classes of drugs such as small molecules, proteins, peptides and antibodies.

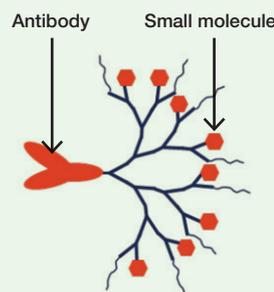
Dendrimers are versatile, highly-branched molecules that allow a great deal of control of drug properties. The images below illustrate some basic structures covered by the patents.

**1. Small molecule delivery**


*For delivery of small molecules such as many cancer drugs (used in Starpharma's internal docetaxel program).*

**2. Extended duration of effect**


*This approach is used to make biological drugs last longer in the body.*

**3. Targeted effectiveness**


*Antibodies or other targeting groups can be combined with many small molecules to achieve targeted delivery.*

**INVESTMENT NEWS**


## >> Substantial holders increase their stake in Starpharma

Institutional funds have continued to build their Starpharma holdings in recent months.

M&G notified the market in early May that it had acquired an additional 2.89 million shares, taking its stake in the Company to 13.06%. Orbis Australia later announced it had increased its stake from 9.45% to 11.38%.

“We appreciate the ongoing strong support shown by our shareholders despite recent market conditions which have been challenging,” Starpharma CEO Dr Jackie Fairley said.

“It is particularly pleasing to see that several of the major local and global funds – including substantial holders M&G and Orbis – have further increased their holdings in Starpharma.

“This is consistent with the positive analyst outlook for the Company, and recognises the significant achievements to date as we advance multiple high-value applications of our dendrimer technology.”

**FINANCIALS**


## >> Starpharma receives first R&D tax refund

Starpharma has received its first tax refund under the AusIndustry 45% R&D Tax Incentive Program.

The Company received \$5.4 million in March, relating to eligible overseas and Australian R&D activities from the 2011/12 financial year.

The tax refund took the Company's cash balance at 31 March 2013 to \$35.9 million, an increase of \$2.7 million on the previous quarter.

**DRUG DELIVERY**


## >> Commercial momentum builds in nanomedicine

2013 has seen increasing commercial interest, and a strong deal-making environment, for novel oncology formulations utilizing nanoparticles.

Both Pfizer and Amgen have signed deals this year for pre-clinical nanoparticle drug candidates. The value of those two pre-clinical deals total almost \$400 million in upfront and potential royalty payments.

This increased activity is supported by industry estimates of the market for nanomedicine-based oncology drugs growing from \$5.5 billion in 2011 to \$12.7 billion in 2016.

Starpharma's lead oncology drug candidate – a dendrimer-enhanced nanoparticle version of the leading drug docetaxel (Taxotere®) – fits squarely in this space.

There is also strong deal-making activity for novel oncology drugs based on antibody-drug conjugates, another area of Starpharma's dendrimer program.

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**Forward Looking Statements**

This document contains certain forward-looking statements, relating to Starpharma's business, which can be identified by the use of forward-looking terminology such as “promising”, “plans”, “anticipated”, “will”, “project”, “believe”, “forecast”, “expected”, “estimated”, “targeting”, “aiming”, “set to”, “potential”, “seeking to”, “goal”, “could provide”, “intends”, “is being developed”, “could be”, “on track”, or similar expressions, or by express or implied discussions regarding potential filings or marketing approvals, or potential future sales of product candidates. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any future results, performance or achievements expressed or implied by such statements. There can be no assurance that any existing or future regulatory filings will satisfy the FDA's and other health authorities' requirements regarding any one or more product candidates nor can there be any assurance that such product candidates will be approved by any health authorities for sale in any market or that they will reach any particular level of sales. In particular, management's expectations regarding the approval and commercialization of the product candidates could be affected by, among other things, unexpected clinical trial results, including additional analysis of existing clinical data, and new clinical data; unexpected regulatory actions or delays, or government regulation generally; our ability to obtain or maintain patent or other proprietary intellectual property protection; competition in general; government, industry, and general public pricing pressures; and additional factors that involve significant risks and uncertainties about our products, product candidates, financial results and business prospects. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described herein as anticipated, believed, estimated or expected. Starpharma is providing this information as of the date of this document and does not assume any obligation to update any forward-looking statements contained in this document as a result of new information, future events or developments or otherwise.