starpharma

SHAREHOLDER Update

OCTOBER 2017

DEP® docetaxel achieves positive phase 1 results and commences phase 2

Starpharma's phase 1 trial for DEP® docetaxel has successfully achieved the key objective of determining a Recommended Phase 2 Dose (RP2D), with no reports of protocol-defined dose limiting toxicities.

The phase 1 trial enrolled 27 heavily pre-treated patients with advanced solid cancers, including lung (small cell and non-small cell), prostate, pancreatic, gastro-oesophageal, breast, cervical, renal and brain. *(continued on page 2)*

Patients treated with DEP® docetaxel

- **No neutropenia observed** (compares to ≥ 90% with Taxotere®)
- **Only one patient (1/27) reported mild alopecia/hair loss** (compares to ~75% with Taxotere®)
- **There were no reports of adverse events** such as anaphylaxis, anaemia, diarrhoea, nail disorders or fluid retention, which are commonly associated with Taxotere®
- **Did not require steroid pre-treatment** due to DEP® docetaxel's detergent-free formulation – unlike Taxotere®
- **Exhibited encouraging efficacy signals** in 13/27 DEP® docetaxel patients in a range of cancers

AZ presents first DEP® candidate AZD0466 – a Bcl2/xL inhibitor

AstraZeneca recently unveiled its first DEP® candidate utilising Starpharma's DEP® delivery platform. AZD0466 is a highly optimised dendrimer formulation of a novel dual Bcl2/xL inhibitor and has the potential to be a best-in-class cancer drug with a broad combination opportunity in solid and haematological tumours. Bcl2 is a clinically validated target with Venetoclax (a first generation Bcl2 inhibitor) approved in 2016. Venclexta (Venetoclax™) US sales are estimated to exceed US$2B by 2022. It is considered that there are gaps in the therapeutic potential of first generation Bcl2 inhibitors, and there are currently no marketed drugs which target this dual (Bcl2/xL) pathway.

"...the DEP® technology has enabled us to advance a very exciting novel oncology agent towards the clinic".

Dr Susan Galbraith, AstraZeneca

In April 2017, a US$2M payment was triggered by achievement of the final preclinical milestone for AZD0466. Under its multiproduct DEP® licence with AstraZeneca, Starpharma is eligible to receive potential development, launch and sales milestones of US$124M for AZD0466. Starpharma will also receive tiered royalties on net sales of AZD0466, with all development costs funded by AstraZeneca.

Successful VivaGel® BV phase 3 results

Starpharma recently reported positive phase 3 results for its breakthrough product for bacterial vaginosis, VivaGel® BV, which successfully demonstrated statistically significant efficacy in reducing the rates of recurrent BV (rBV) in its two pivotal trials.

The two double-blind, randomised, placebo-controlled trials, SPL7013-017 US trial and SPL7013-018 European trial, were identical in design and enrolled a total of 1,223 women who had a history of rBV. Trial participants used either VivaGel® BV or placebo gel on alternate days for 16 weeks.

The trials achieved their primary objective for VivaGel® BV, demonstrating statistically significant superiority compared to placebo in preventing rBV, and consistently reduced BV recurrence as assessed by the primary efficacy endpoint and all five secondary efficacy measures.

The majority of women who used VivaGel® BV remained BV-free not only during the 16-week treatment phase but had sustained benefits for at least three months after cessation of treatment.

(continued on page 3)

BV Specialist's View

"VivalGel® BV is a wonderful product which specifically targets BV bacteria. My patients have called it a 'life-changing and miraculous treatment".

Dr Belvia Carter, Principal investigator & Obstetrician Gynaecologist Memphis, Tennessee. Principal investigator in the 017 US Trial.

INTERNAL DRUG DELIVERY

DEP® docetaxel achieves positive phase 1 results and commences phase 2

(continued from page 1)

Patients received DEP® docetaxel at a range of doses providing the equivalent of 10–105mg/m² docetaxel. Throughout the phase 1 trial, patients were treated with up to six cycles of DEP® docetaxel.

As there were no protocol-defined dose limiting toxicities (DLTs) in patients across all dose levels, no formal maximum tolerated dose (MTD) was established for DEP® docetaxel in the trial. Instead, the selection of the recommended phase 2 dose (RP2D) of DEP® docetaxel was determined taking account of the overall safety, tolerability, pharmacokinetics and preliminary efficacy results for DEP® docetaxel in the trial. The RP2D has been confirmed as 60mg/m² docetaxel equivalents administered intravenously once every 3 weeks.

Due to the dendrimer delivery, the PK characteristics of DEP® docetaxel vary from conventional docetaxel formulations (e.g. Taxotere®), whereby every milligram of docetaxel that is dosed as DEP® docetaxel results in significantly greater exposure to docetaxel than with conventional formulations like Taxotere®.

While the phase 1 trial was not an efficacy study, encouraging efficacy signals including stable disease were observed in 13/27 DEP® docetaxel-treated patients for a range of tumour types, including cancers that do not typically respond to docetaxel. These positive findings were observed despite most trial patients having not responded to, or relapsed, following previous anti-cancer therapies and at doses of DEP® docetaxel as low as 20mg/m².

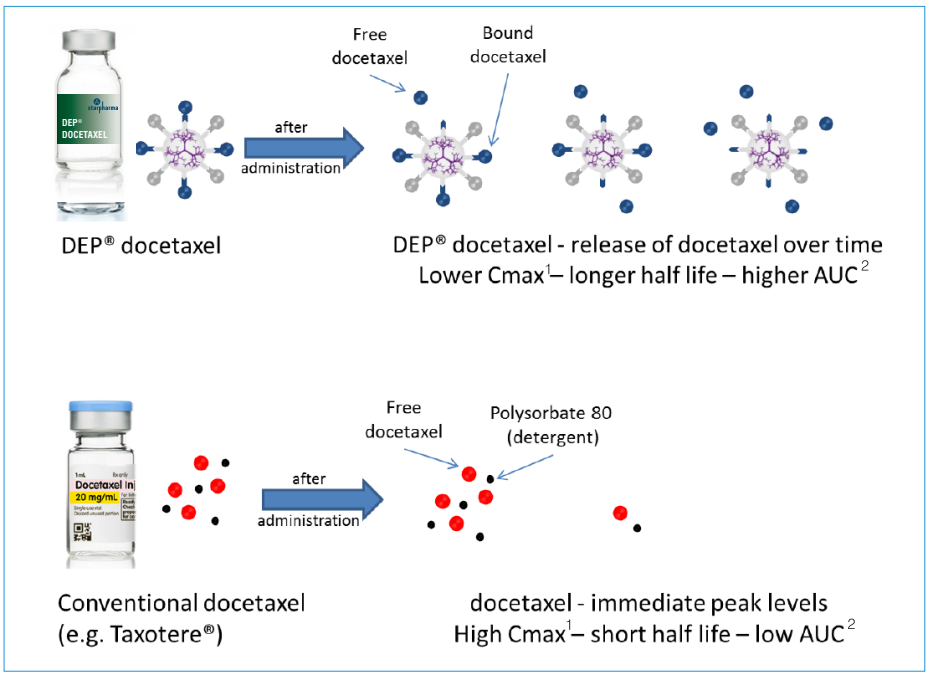
Phase 2 clinical trial

The phase 1 DEP® docetaxel trial has now been adapted to transition seamlessly into phase 2, with ethics and regulatory approvals already granted, and recruitment and patient screening activities already underway.

The phase 2 trial will be conducted at multiple sites, including Guy's and St Thomas' Hospital in London, which also participated in the phase 1 study. Several other sites are currently being initiated and recruitment at those sites will begin in the near future.

The phase 2 study is as an open-label, two-stage design, with the objective of establishing anti-tumour activity (efficacy) and safety of DEP® docetaxel at the RP2D of 60mg/m².

The first stage will enrol approximately 20 patients with either lung or prostate cancer, which are key approved indications for docetaxel (Taxotere®).



[1] Cmax reflects the maximum concentration achieved of drug in the blood.
[2] AUC reflects the area under the curve, measuring total drug exposure over time.

It is intended that the second stage of the trial will enrol a further 20 patients to be selected based on results from the first stage. In parallel, Starpharma will also investigate the potential benefits of combining DEP® docetaxel with another anticancer agent, nintedanib (Vargatef®), which is approved for treatment of lung cancer in combination with docetaxel (Taxotere®).

Docetaxel is one of the most widely used cancer drugs for treatment of a wide range of solid tumours including breast, lung and prostate. It is marketed by Sanofi Aventis as Taxotere® and generated peak global sales in excess of US$3 billion.

Other internal DEP® candidates

DEP® cabazitaxel

DEP® docetaxel is one of several candidates being developed internally by Starpharma.

The next most advanced internal DEP® candidate is DEP® cabazitaxel, a detergent free version of cancer drug Jevtana® marketed by Sanofi Aventis. DEP® cabazitaxel significantly outperformed Jevtana® in a human breast cancer model with respect to both level and duration of anti-cancer activity and survival, and with reduced bone marrow toxicity. The phase 1 clinical trial for DEP® cabazitaxel is planned to commence in 2H CY2017 with extensive preparations already complete.

DEP® irinotecan

Starpharma has also created a DEP® version of the already marketed major cancer drug, irinotecan (marketed by Pfizer under the brand name Camptosar®). DEP® irinotecan has demonstrated significantly better anti tumour activity and increased survival compared with irinotecan in a variety of human colon cancer models, including those usually not responsive to irinotecan.

Irinotecan is primarily used to treat colorectal cancer, where there is a significant unmet need and an attractive market. Starpharma is expediting its development and currently scaling up the drug for further preclinical studies prior to clinical trials.

VIVAGEL®

Successful VivaGel® BV phase 3 results

(continued from page 1)

In addition, VivaGel® BV also demonstrated excellent safety and tolerability, including very low rates of candidiasis (thrush).

VivaGel® BV	Current BV therapies
Treatment and rapid symptom resolution	Inadequate efficacy or inappropriate for use in prevention of recurrent BV
Non-antibiotic	Do not stop BV from recurring
Local effect, not systemically absorbed	Antibiotic resistance is problematic
Excellent tolerability	Antibiotics have side effects and other issues that inhibit usage (e.g. bad taste, yeast infections, patients unable to consume alcohol)
Selective antimicrobial effect	No currently approved therapies for prevention of rBV
Suitable for long term use/rBV	

The excellent trial data, together with the coveted Special Protocol Assessment, places Starpharma in a strong position to pursue FDA approval to market VivaGel® BV in the US. Starpharma's New Drug Application (NDA) is expected to be submitted by year end with initial components provided to the FDA in the near future.

FDA QIDP and Fast Track status

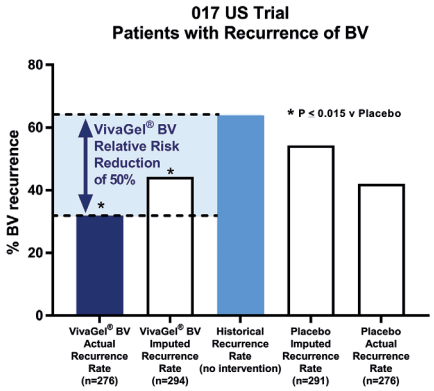
The FDA has also granted Starpharma two highly sought after designations for VivaGel® BV which are expected to significantly reduce the timeline for regulatory approval – Qualified Infectious Disease Product (QIDP) designation and Fast Track status – which both carry significant benefits for regulatory approval and commercialisation, including:

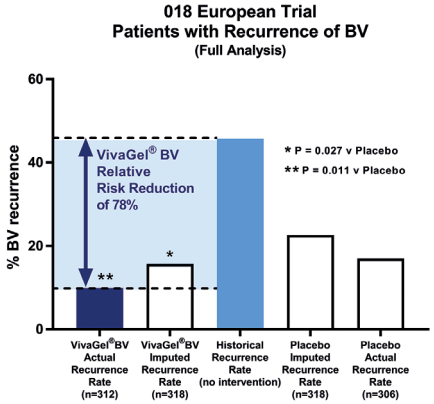
– Increased dialogue with the FDA;
– Priority regulatory review; and
– Additional five years' market exclusivity.

Commercialisation

Starpharma is currently actively engaged in both global and regional negotiations for commercial rights to VivaGel® BV, with a number of term sheets under discussion. The company has engaged a leading global healthcare investment bank to facilitate a competitive process for finalising commercial arrangements with potential partners worldwide.

The relative risk reduction for VivaGel® BV (actual recurrence) compared to historical recurrence rates of the patients was 50% and 78%, respectively, in the two trials





The Actual Recurrence Rate in the above graphs is where patients that drop out are excluded from the analysis; whereas the Imputed Recurrence Rate is where patients that drop out are deemed to have failed (ie. had BV), even if they were BV free. Therefore, the Actual Recurrence Rate is a better reflection of the everyday (in market) benefit of VivaGel® BV, compared to the more stringent Imputed Recurrence Rate. VivaGel® BV demonstrated benefit across both these measures in the trials. The Historical Recurrence Rate is the rate of recurrence that would have been expected in this population in a 16-week period if they did not have any prevention therapy.

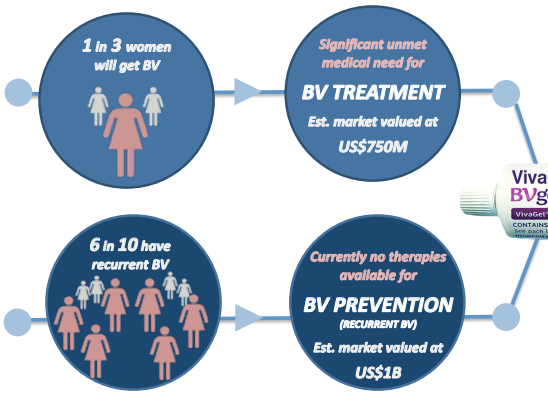
BV Expert View

"I'm impressed with the trial data for VivaGel® BV for prevention of rBV and believe that it will offer a new management tool for this very troublesome condition".

Professor George Kinghorn, OBE MD FRCP, Former consultant physician in genitourinary medicine and international medical expert in BV, Sheffield, UK.

"Given there are no approved products for the management of rBV in the US, VivaGel® BV stands to become first in class in a large global market estimated at around US$1B annually".

Dr Jackie Fairley, CEO Starpharma



VivaGel® for BV Treatment

- Approved in the EU
- Australian launch by Aspen awaiting TGA approval
- NDA well-advanced
- Licensing negotiations underway

VivaGel® for BV Prevention

- Successful phase 3 trials
- NDA well-advanced
- Regulatory approval processes underway in other regions
- Licensing negotiations underway

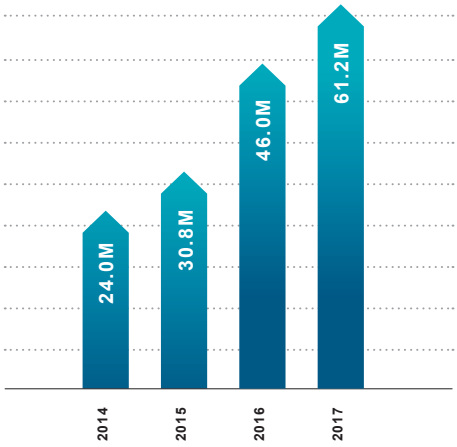
CORPORATE NEWS

FY17 Financial results; >$60M cash at 30 June

Starpharma reported a net profit after tax of $8.2 million, which includes a $24.7 million gain on the sale of Starpharma Agrochemicals, with the company selling the business for $35 million of cash consideration. Other key financial data:

- Cash position at 30 June of $61.2M
- Total revenue and other income of $3.6M, including the $2.6M DEP® milestone from AstraZeneca
- Net operating and investing cash inflows of $15.7M (FY16: net outflow of $17.8M).

Cash & Cash Equivalents



Annual Report and Annual General Meeting

Starpharma's 2017 Annual Report was released on 28 August 2017. The report can be accessed via www.starpharma.com

Annual General Meeting (AGM)

This year's AGM will be held at 3pm on Wednesday 29 November 2017 at the offices of Norton Rose Fulbright, Level 15, RACV Tower, 485 Bourke Street, Melbourne, Victoria. A Notice of AGM and accompanying voting forms will be sent to shareholders later this month.

Grant awarded to Starpharma-Monash

Starpharma and Monash Institute of Pharmaceutical Sciences were recently awarded $300,000 in grant funding from the SIEF STEM+ Business Fellowship Program to engage two post-doctoral Research Fellows.

The funding enables collaboration across two separate programs which will expand the activities around Starpharma's novel Targeted DEP® conjugates. It is expected to generate considerable commercial benefit by way of new intellectual property and commercialisation opportunities for Starpharma.

Starpharma and Peter Mac Cancer Centre awarded grant

Starpharma and Peter MacCallum Cancer Centre were awarded a further Federal Government Innovation Connections grant to support innovative research within Starpharma's DEP® oncology program.

The funding will be used to assess sophisticated new and existing DEP® candidates in combination with existing therapeutic agents. The work undertaken has potential to generate important data aimed at improving treatment regimens and further enhances commercialisation opportunities for Starpharma's DEP® technology.

Starpharma News & Events

Starpharma CEO Dr Jackie Fairly was interviewed on Sky Business News' Ticky and also featured on the Finance News Network following the successful phase 3 trial results for VivaGel® BV for the prevention of recurrent bacterial vaginosis. Watch the full interviews here: http://www.starpharma.com/starpharma_tv

sky NEWS BUSINESS

FINANCE NEWS NETWORK

A number of media publications covered Starpharma's phase 3 VivaGel® BV results and phase 1 DEP® docetaxel results. To view the articles, click here: http://www.starpharma.com/news/in_the_media

Starpharma Holdings Limited
(ASX:SPL; OTCQX:SPHRY)
ABN 20 078 532 180
4-6 Southampton Crescent
Abbotsford
Vic 3067
+61 3 8532 2700

www.starpharma.com

Company
Nigel Baade
CFO/Company Secretary
+61 3 8532 2704
investor.relations@starpharma.com

Media Relations
Rebecca Wilson
WEBuchan
Mob: +61 417 382 397
rwilson@buchanwe.com.au

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.