



## ASX ANNOUNCEMENT

### AGM – Chair address and CEO’s presentation

**Melbourne, Australia; 22 November 2013:** Attached is the Chairman’s address together with the CEO’s presentation to the Annual General Meeting of Starpharma Holdings Limited (ASX:SPL, OTCQX:SPHRY), to be held at 4.00pm today.

#### ABOUT STARPHARMA

Starpharma Holdings Limited (ASX:SPL, OTCQX:SPHRY), located in Melbourne Australia, is an ASX 300 company and is a world leader in the development of dendrimer products for pharmaceutical, life science and other applications.

Starpharma’s underlying technology is built around dendrimers – a type of synthetic nanoscale polymer that is highly regular in size and structure and well suited to pharmaceutical uses. Starpharma has three core development programs: VivaGel® portfolio, drug delivery, and agrochemicals with the Company developing a number of products internally and others via commercial partnerships.

Starpharma’s lead product is VivaGel® (SPL7013 Gel), a gel-based formulation of a proprietary dendrimer. VivaGel® is under clinical development for the treatment and prevention of bacterial vaginosis (BV) and also as a vaginal microbicide to prevent the transmission of sexually transmitted infections including HIV and genital herpes. Starpharma has also signed separate licence agreements with Ansell Limited (ASX:ANN) and Okamoto Industries Inc (Tokyo Stock Exchange) to market a value-added, VivaGel®-coated condom. Ansell manufactures and sells leading condom brands worldwide, including Lifestyles®, ZERO® and SKYN®. Okamoto is the market leader for condoms sold in Japan, the world’s second largest condom market.

In the wider pharmaceutical and life science fields, Starpharma has both partnered and internal programs in Drug Delivery. Drug Delivery partners include GSK, Lilly and AstraZeneca. In its internal program Starpharma has announced significant tumour-targeting results in its docetaxel (Taxotere®) program, with animal studies showing its dendrimer-enhanced version of docetaxel to have significantly superior anti-cancer effects across a range of important cancer types including breast, prostate, lung and ovarian tumour, when compared to Taxotere® (docetaxel).

In agrochemicals Starpharma has a series of partnerships with leading industry players including Nufarm (ASX:NUF) and Makhteshim Agan as well as internal programs including an enhanced version of glyphosate (the active ingredient in Roundup®).

#### FOR FURTHER INFORMATION

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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 authorities' requirements regarding any one or more product candidates nor can there be any assurance that such product candidates will be approved by any 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 trial results, including additional analysis of existing data, and new 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.

## **Chairman's Address**

### **Starpharma Holdings Limited Annual General Meeting**

**22 November 2013**

Good afternoon and welcome to the annual general meeting of Starpharma.

As mentioned in my opening remarks, unfortunately our Chairman Peter Bartels is unable to be with us today following a medical procedure. He is doing very well and sends his best regards. It took some persuasion to insist he not attend today, and as Deputy Chair I'm pleased to deliver the Chairman's address on behalf of Peter Bartels.

It has been another year of important progress across the Company's partnered and internal programs. I'd like to begin by highlighting a theme that can be seen running through the events of 2012-13 and the period to now. This is the growing body of evidence in support of the broad utility of our dendrimers, and their robustness as a platform technology.

During the past year we announced the pre-clinical trial results for 2 leading cancer drugs - docetaxel, and oxaliplatin - in which clear performance gains were shown from including dendrimers in each drug's formulation. These gains included reductions in key toxicities and enhancements in tumour-targeting effectiveness.

The most advanced drug candidate in the company's drug delivery program - dendrimer-docetaxel - will advance to phase 1 clinical trial late this year in what will be another substantial milestone for the company. Of course, the market opportunity is significant for cancer drugs that work better and have fewer side-effects.

During the year we also reported a dendrimer-based treatment opportunity for viral conjunctivitis - a disease currently with no known cure - following a positive study result. We also continued to see important progress within our agrochemical program with the application of dendrimers to crop protection products.

Our partnered programs also expanded during the period to include another global pharmaceutical company in AstraZeneca and leading crop protection company Makhteshim Agan. Other agrochemical deals include Gowan and Isagro. Our partners now account for well over half of the world's top 10 pharmaceutical and top 10 agrochemical companies and a number of niche players as well.

Of course the period also included the release of results from three late-stage trials of VivaGel.

This brings me to another factor that I feel the events of 2012-13 has underscored. It is the appropriateness of the Company's very deliberate strategy of advancing a broad portfolio of products and approaching commercialization on a number of fronts.

This has ensured the Phase 3 results in VivaGel for a treatment indication - which surprisingly and disappointingly did not meet the primary end-point required by FDA for a Treatment claim - can be

viewed appropriately within the broader context of a suite of high-potential opportunities for Starpharma.

That being said, the Phase 2 trial results for VivaGel as a preventive for recurrent infection were highly positive and, in all of these studies, VivaGel was seen to deliver excellent symptomatic relief for sufferers of bacterial vaginosis. These symptomatic benefits are being actively explored commercially. Viewed in total, the results strongly support VivaGel's ongoing progress to commercialization.

Shareholders can also be assured expenditure and cash continues to be prudently managed, while continuing to advance these multiple opportunities. The net cash burn of \$9 million, assisted by the receipt of \$5.4 million from R&D tax incentives is modest given the numerous and substantial activities completed during the year.

Starpharma's cash reserves remain strong at \$33.8 million at the end of the financial year.

We announced a few weeks ago, Starpharma's well-considered and very deliberate strategy for Board succession and renewal. I know Peter was keen to speak on this himself and I will try and deliver his message in the manner he would.

Peter will be retiring from the roles of chairman and non-executive director of Starpharma in the middle of 2014. This would have been his tenth year of involvement with Starpharma and we know it has been with immense pride that he has watched over the maturation of Starpharma into the company it is today - a company which now has a growing international profile, an extensive portfolio of commercial partnerships and is approaching commercialisation for its lead product.

The succession plan has Peter and the Board's full support and endorsement. Mr Robert Thomas will be appointed to the Board of Directors in December with plans for him to assume the role of Chairman on Peter's retirement next year.

Rob's deep financial experience combined with a very solid understanding of the global healthcare environment will be highly complementary to the existing Board. The company will be in safe hands.

I'd like to take this opportunity to again thank the many talented people at Starpharma who have driven this enormous progress - all of the company's employees and executive management, led by CEO Dr Jackie Fairley, and my fellow board members. I'd also like to thank Ben Rogers who will also be retiring from the role of Company Secretary.

Finally, to our shareholders. Thank you for your continued support in our company. We have one of the deepest, most diverse international registers in the sector which is a testament to the hard work of the Starpharma team, and the very significant opportunities for our multiple products to improve the way we live. Whether it be better cancer treatments, protection against insidious infections such as bacterial vaginosis, or crop protection products that are kinder on the environment we have an enormous opportunity that carries significant commercial and societal value.

Thank you again.

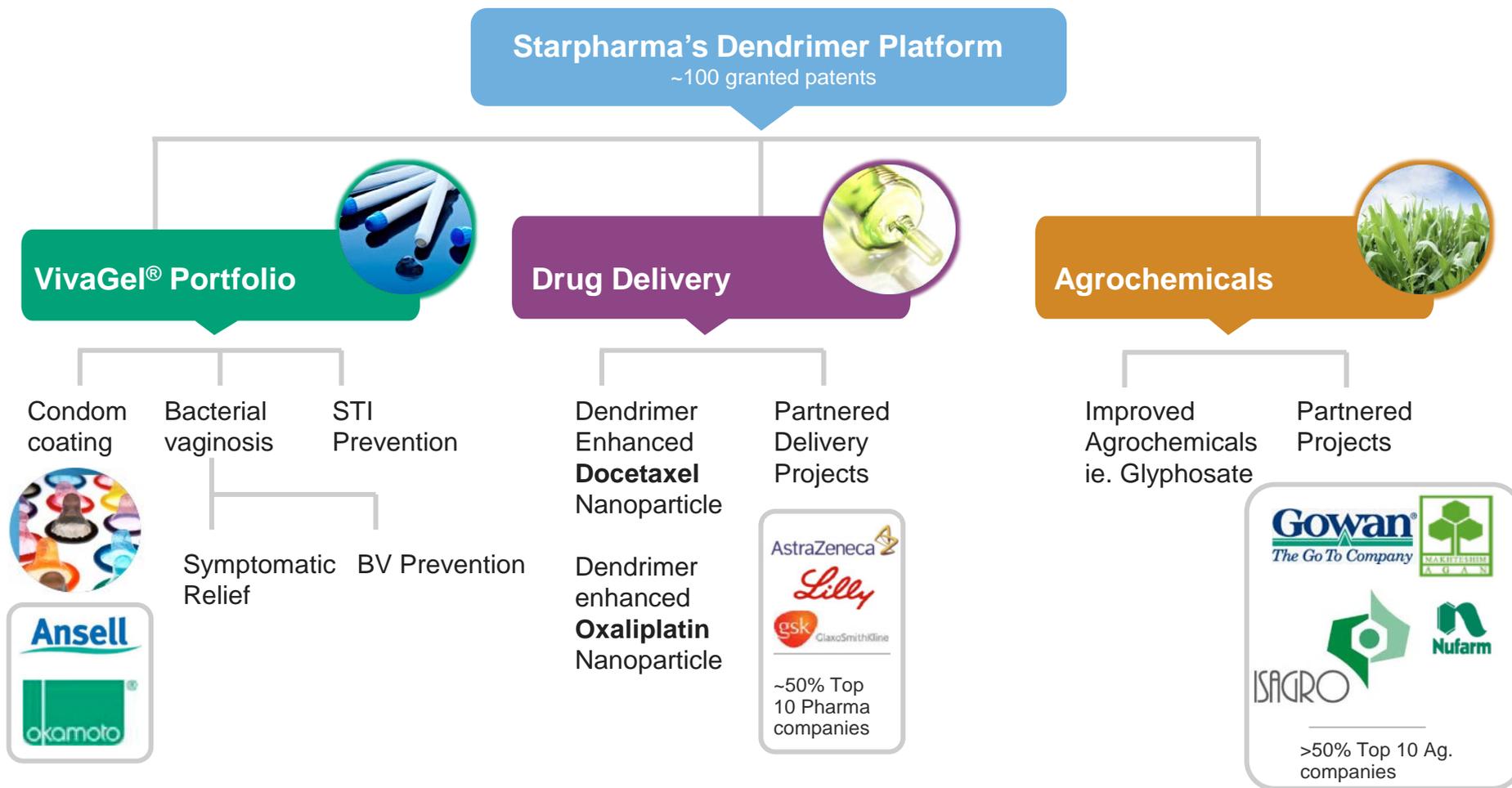
(Peter J Jenkins, Deputy Chairman,  
on behalf of Peter T Bartels, AO, Chairman)



**CEO Presentation  
Starpharma Holdings Limited  
Annual General Meeting  
22 November 2013**

*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 presentation 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.*

# Significant optionality: Potential for multiple and parallel revenue streams



## Pharmaceutical Development Pipeline

			Res	PC	PhI	PhII	PhIII	Reg.	Mkt	
Antimicrobial / Antiviral (SPL7013)*	VivaGel®	BV Symptomatic Relief**	Completed					Planned		
	VivaGel®	BV Prevention of Recurrence	Completed					Planned		
	VivaGel® (SPL7013)*	Viral Conjunctivitis	Completed							
	Partnered - Ansell and Okamoto	VivaGel® Coated Condom	Completed						Planned	
Oncology (Internal)	Drug Delivery	Docetaxel (various cancers)	Completed		Planned					
	Drug Delivery	Oxaliplatin (various cancers)	Completed		Planned					
	Drug Delivery	Various anticancers	Completed							
Undisclosed (incl. oncology & insulin)	Partnered programmes	Drug Delivery - Various	Completed							

 Completed

 Planned

\* VivaGel® supported by a full FDA CMC package for an NDA

\*\* Alternative claim strategies being pursued

## 2012-2013 Highlights

### VivaGel® Portfolio



#### Phase 2 prevention of recurrent BV infection trial completed

Positive results support progression to pivotal phase 3 trial

#### Phase 3 BV treatment trials completed

Pursuing registration for Symptomatic Relief indication

#### SPL7013 shows potent activity against viral conjunctivitis

Potential first-in-class therapy for viral conjunctivitis

### Drug Delivery



#### Dendrimer-docetaxel

Improved efficacy and reduction in dose limiting toxicity. Proceeding to Phase 1 clinical trial

#### Dendrimer-oxaliplatin

Improved efficacy and reduction in dose limiting toxicity. Advancing to clinical development

#### Astra Zeneca collaboration

Partnership to undertake studies using Starpharma's oncology dendrimer molecules

#### New patents strengthen & expand platform

Patents in US and China provide "composition of matter" and other broad protection for Drug Delivery

### Agrochemicals



#### Makhteshim Agan partnership

Priostar® dendrimers applied to novel crop protection formulations

#### New formulations demonstrate further crop protection improvements

Studies of enhanced glyphosate (RoundUp®) reformulations show improved rain fastness and efficacy.

#### Two Additional Crop Protection partnerships



### Corporate



#### \$5.4m R&D tax incentive payment

Relating to Australia and overseas R&D in FY11/12

# Starpharma - In The News



*"I believe the stock can double in value over the next year or so."*  
Brendon Lau, Business Journalist



*"this will be a total game changer"*  
Matthijs Smith, Analyst, Canaccord Genuity



*"3 biotech stocks for a healthy portfolio"*  
Motley Fool

And covered by many more in 2013...



## Corporate and financial information

CAGR	3 year	5 year
SPL	7%	28%
ASX 300	4%	6%

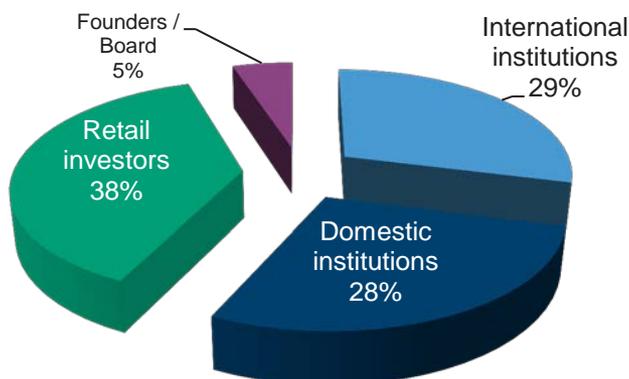
Key Financial Data (Financial Year to 30 June)	FY 2013 AUD \$M	FY 2012 AUD \$M
Total revenue and income	2.4	2.9
R&D Tax Incentive	8.7	1.3
Net loss after tax	(5.2)	(13.7)
Cash outflow from operations	(9.8)	(9.8)
Cash (30 September 2013)	31.5	

### Strong institutional register

- 29% International Institutions
- 28% Australian Institutions

### Major institutional shareholders

- M&G, Acorn, Allan Gray



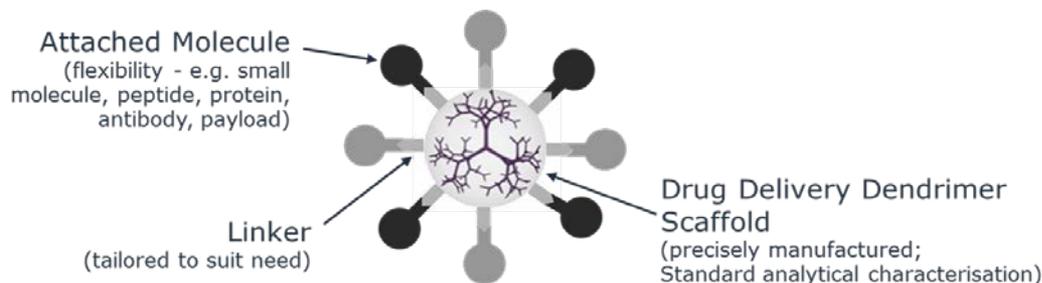
Analyst ratings	Target Price	Price Upside*
 <b>CIMB</b>	Buy (Outperform)	\$1.79 104%
 <b>CANACORE Genuity</b>	Buy	\$2.00 128%
 <b>BELL POTTER</b>	Buy	\$1.58 80%
 <b>PhillipCapital</b>	Buy	\$1.90 117%
 <b>TAYLOR COLLISON</b>	Hold	\$1.15 31%
* Price upside based on closing at \$0.875 on 12/11/2013		Average Target Price \$1.68 Average Price Upside* 92%



**Drug Delivery**

# Dendrimers in drug delivery: Nanoparticles with multiple advantages

Maximising commercial opportunity through differentiation and value add



**Multiple Partners including:**



	Target Profile	Dendrimer-Docetaxel	Dendrimer-Oxaliplatin
<b>Therapeutic Performance</b>	Enhanced Pharmacokinetics	✓ Plasma half life >60x Taxotere®	✓ Plasma half life >50x Eloxatin®
	Enhanced Efficacy	✓ Enhanced efficacy in Breast, Prostate, Ovarian cancer models	✓ Efficacy in platinum-insensitive colon cancer model
	Targeted Drug Delivery	✓ Tumor accumulation 40x Taxotere®	✓ Expect enhanced accumulation in tumor
	Better Side Effect profile	✓ Protection against neutropenia No Polysorbate 80	✓ Protection against Neutropenia and Peripheral Neurotoxicity
<b>Commercial Performance</b>	Extend Patent Life	✓ Filings to 2032	✓ Filings to 2034
	Accelerated development	✓	✓
	Robust, scalable manufacturing & excellent stability	✓	✓
	Competitive advantages	✓	✓
	Elevated ROI	✓	✓
	Lower Technical and Financial Risk than NCEs	✓	✓

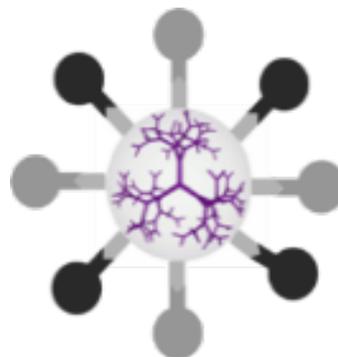
## Starpharma's Dendrimer-Docetaxel: Multiple benefits



- Docetaxel (Taxotere<sup>®</sup>) is a blockbuster chemotherapeutic:  
docetaxel sales US\$3.1Bi (2012)
- Docetaxel is used in major cancer types including breast, prostate and lung cancer
- Docetaxel is insoluble so Taxotere<sup>®</sup> incorporates a detergent (polysorbate 80) to solubilize, which is associated with significant toxicity
- Starpharma's patented Dendrimer-Docetaxel is a nanoparticle formulation with multiple advantages compared to Taxotere<sup>®</sup>
- Patents filed will offer coverage to 2032
- Phase 1 to commence Dec/Jan

### Dendrimer-Docetaxel vs. Taxotere<sup>®</sup>

1. Elimination of major dose-limiting toxicity (neutropenia)
2. Improved water solubility allowing removal of toxic components
3. Tumour-targeting
4. Extended half-life
5. Improved efficacy (breast, ovarian, prostate)



(docetaxel) Injection Concentrate, Intravenous  
Infusion (IV).

Rx only

The frequency of hypersensitivity reactions, anaphylaxis and fluid retention with docetaxel, despite premedication, led the FDA to issue a “black box” warning on the package insert.

**“100% of the patients in Japan and the United States who died of docetaxel-associated anaphylaxis\* had received prophylaxis”**  
(\*anaphylaxis is believed to be caused by polysorbate 80)

	United States		Japan	
	Dead (n=3)	Survived (n=33)	Dead (n=20)	Survived (n=11)
% patients received prophylaxis	100%	74%	100%	50%

**“This observation reinforces the importance of developing pharmaceutical agents that do not contain stabilizers such as polysorbate 80”**

Table adapted from: Polysorbate 80 hypersensitivity reactions: a renewed call to action. Norris, LB et al; September 2010; COMMUNITY ONCOLOGY



Docetaxel  
+ water

Starpharma's water soluble  
Dendrimer-Docetaxel:  
solubility >↑ 20,000x  
(polysorbate 80-free)

**WARNING: TOXIC DEATHS, HEPATOTOXICITY, NEUTROPENIA, HYPERSENSITIVITY REACTIONS, and FLUID RETENTION**

The incidence of treatment-related mortality associated with TAXOTERE therapy is increased in patients with abnormal liver function, in patients receiving higher doses, and in patients with non-small cell lung carcinoma and a history of prior treatment with platinum-based chemotherapy who receive TAXOTERE as a single agent at a dose of 100 mg/m<sup>2</sup> [see [Warnings and Precautions \(5.1\)](#)].

TAXOTERE should not be given to patients with bilirubin > upper limit of normal (ULN), or to patients with AST and/or ALT >1.5 × ULN concomitant with alkaline phosphatase >2.5 × ULN. Patients with elevations of bilirubin or abnormalities of transaminase concurrent with alkaline phosphatase are at increased risk for the development of grade 4 neutropenia, febrile neutropenia, infections, severe thrombocytopenia, severe stomatitis, severe skin toxicity, and toxic death. Patients with isolated elevations of transaminase >1.5 × ULN also had a higher rate of febrile neutropenia grade 4 but did not have an increased incidence of toxic death. Bilirubin, AST or ALT, and alkaline phosphatase values should be obtained prior to each cycle of TAXOTERE therapy [see [Warnings and Precautions \(5.2\)](#)].

TAXOTERE therapy should not be given to patients with neutrophil counts of <1500 cells/mm<sup>3</sup>. In order to monitor the occurrence of neutropenia, which may be severe and result in infection, frequent blood cell counts should be performed on all patients receiving TAXOTERE [see [Warnings and Precautions \(5.3\)](#)].

Severe hypersensitivity reactions characterized by generalized rash/erythema, hypotension and/or bronchospasm, or very rarely fatal anaphylaxis, have been reported in patients who received a 3-day dexamethasone premedication. Hypersensitivity reactions require immediate discontinuation of the TAXOTERE infusion and administration of appropriate therapy [see [Warnings and Precautions \(5.4\)](#)]. TAXOTERE must not be given to patients who have a history of severe hypersensitivity reactions to TAXOTERE or to other drugs formulated with polysorbate 80 [see [Contraindications \(4\)](#)].

Severe fluid retention occurred in 6.5% (6/92) of patients despite use of a 3-day dexamethasone premedication regimen. It was characterized by one or more of the following events: poorly tolerated peripheral edema, generalized edema, pleural effusion requiring urgent drainage, dyspnea at rest, cardiac tamponade, or pronounced abdominal distention (due to ascites) [see [Warnings and Precautions \(5.5\)](#)].

## Dendrimer-Docetaxel: Better efficacy and less toxicity

- Dendrimer-Docetaxel shows significantly better efficacy than Taxotere®

Improved Efficacy: At 94 days:

- 60% Dendrimer-docetaxel mice - no evidence of tumour
- 100% Taxotere® mice had tumour re-growth

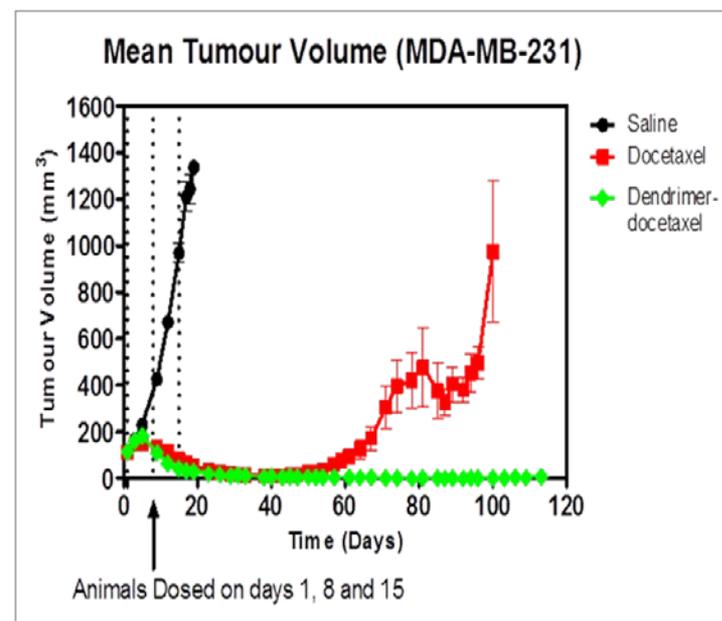
Dendrimer-Docetaxel has demonstrated activity in a range of common tumour types (breast, prostate, ovarian and lung)

### Efficacy: Breast Cancer Model\*



Saline Control 19d

Dendrimer-Docetaxel 19d

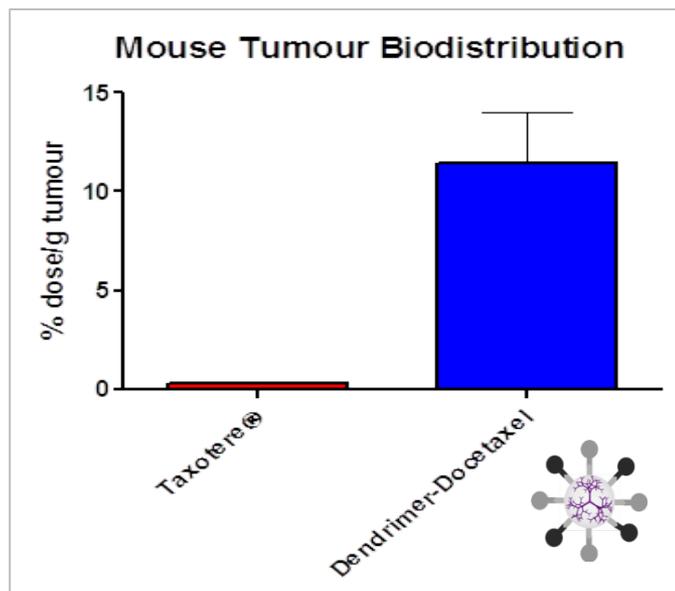


\*Mouse Xenograft (MDA- MB 231); N= 10/group ;  
^ p< 0.0001

## Dendrimer-Docetaxel: Multiple benefits - Longer half-life, tumor targeting and reduced neutropenia

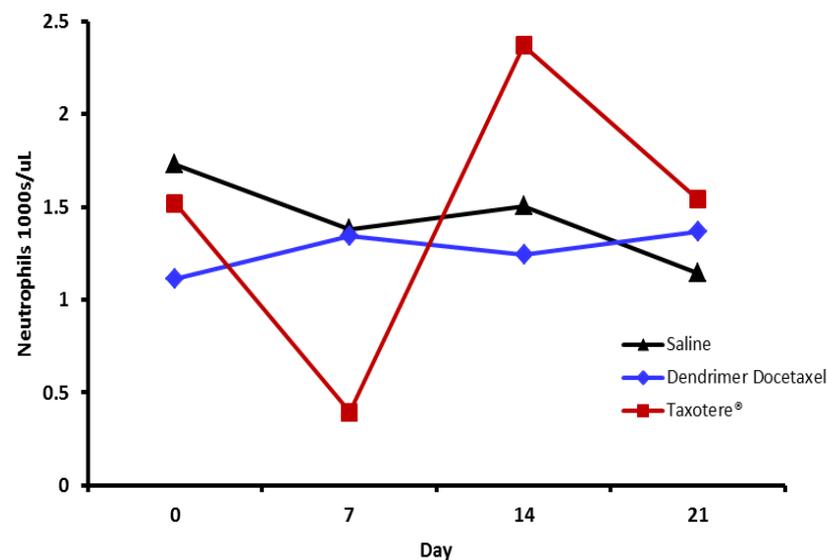
- Dendrimer-Docetaxel formulation extends plasma half life by >60 fold vs. Taxotere<sup>®</sup> enabling sustained delivery of docetaxel ( 39 hours vs. 30 mins)
- Dendrimer–Docetaxel formulation provides > 40 fold greater docetaxel accumulation in tumour tissue compared to Taxotere<sup>®</sup>

**Complete lack of neutropenia with Dendrimer-Docetaxel cf. severe neutropenia for Taxotere<sup>®</sup>**



^3 days post administration; n = 5 mice per group

Studies carried out in collaboration with Monash Institute of Pharmaceutical Science



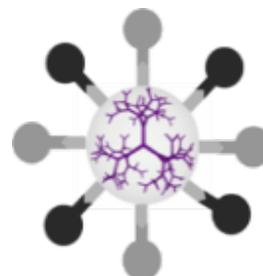
Dendrimer-Docetaxel formulation and Taxotere<sup>®</sup> at equivalent doses (based on docetaxel; 9mg/kg); n=6 rats/group

## Dendrimer-Docetaxel: Proposed Phase 1 Clinical Trial

- Standard Phase 1 design: Dose escalation and expansion study in cancer patients (various tumours)
- Estimated sample size: 25-30 patients
- Trial activities well advanced, ethics underway, CRO selected and planned commencement Dec/Jan
- To be conducted in Australia (eligible under tax credit scheme)
  
- **Primary Objectives:**
  - Establish the maximum tolerated dose (MTD) and dose limiting toxicities (DLT)
  
- **Secondary Objectives:**
  - Characterise safety and tolerability (including observations regarding neutropenia etc)
  - Explore preliminary anti-tumour efficacy with CT scans, bone scans, tumour markers etc.
  - progressive reports of trial results possible as open label study
  - Characterise pharmacokinetics
  - Define recommended dose for Phase 2

## Starpharma's Dendrimer Enhanced Oxaliplatin: Multiple benefits

- Dendrimer Enhanced Oxaliplatin is a proprietary dendrimer version of blockbuster cancer drug, oxaliplatin (ELOXATIN<sup>®</sup>, Sanofi)
- Oxaliplatin sales ~ US\$2B (2012)
- Neuropathy is reported in ~90% patients and Neutropenia in > 70% receiving ELOXATIN<sup>®</sup> (standard oxaliplatin)

### SPL's Dendrimer Enhanced Oxaliplatin:

- Several important benefits vs. Eloxatin<sup>®</sup>
- Granted patents to 2028; additional filings to 2034
- Planning underway to enter the clinic

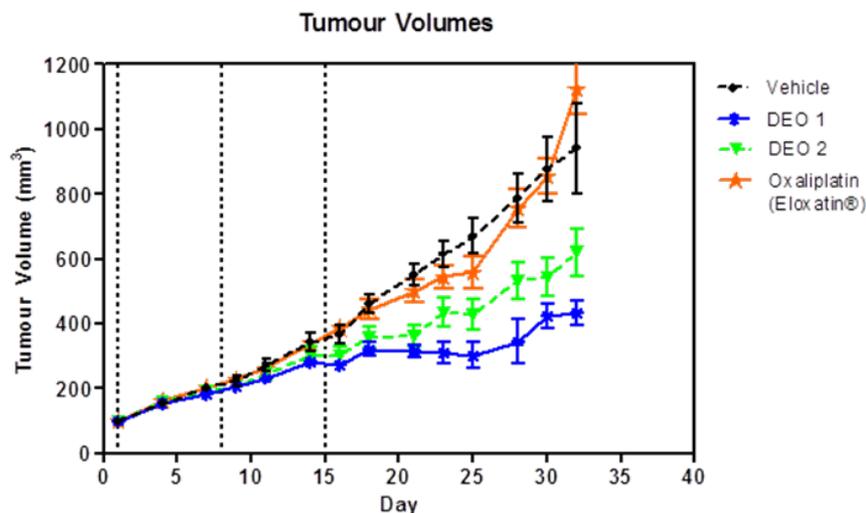
#### Dendrimer Enhanced Oxaliplatin vs. Eloxatin<sup>®</sup>

1. Improved efficacy (colon cancer model)
2. Extended half life (> 50x oxaliplatin)
3. Protection against primary dose-limiting toxicity, neurotoxicity
4. Protection against neutropenia

## Dendrimer Enhanced Oxaliplatin (DEO): Improved efficacy and reduced toxicity

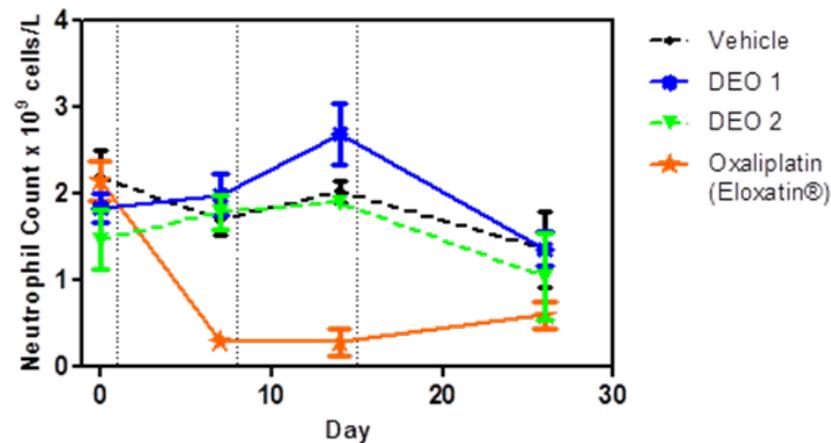
- In a colon cancer model\* Dendrimer-Enhanced Oxaliplatin achieved:
  - significantly better tumour-inhibiting efficacy cf. ELOXATIN®
  - reduced bone marrow toxicity (neutropenia and thrombocytopenia) cf. ELOXATIN®

### Improved Efficacy\*:



Mouse xenograft – colon cancer (SW620)  
Mean Tumour volume vs time

### Reduced Neutropenia (Myelosuppression): Neutrophils# (cells/L)



Oxaliplatin treated mice exhibited severe neutropenia;  
Neutropenia was not seen with Dendrimer Enhanced Oxaliplatin

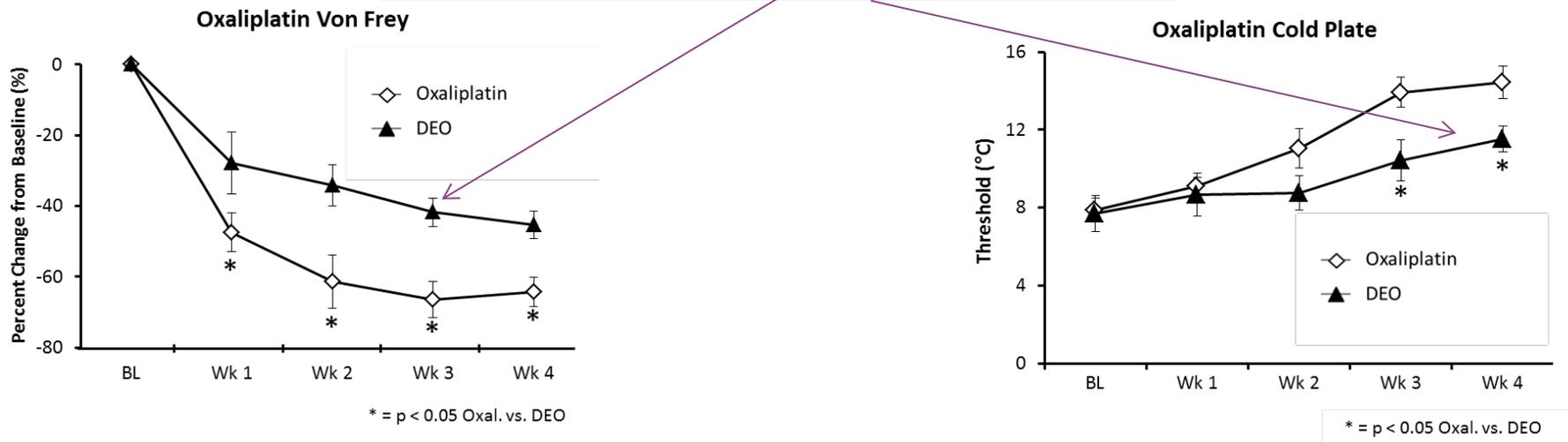
\*Mouse Xenograft (SW620); N= 12/group ;  $p < 0.0001$

# N= 5/group Tumour bearing mice (SW620);  $p < 0.0001$

## Dendrimer Enhanced Oxaliplatin (DEO): Reduced neurotoxicity

- 85-95% of ELOXATIN® treated patients experience peripheral neuropathy (dose-limiting toxicity)

*SPL's Dendrimer Enhanced Oxaliplatin nanoparticle formulation resulted in significantly reduced neurotoxicity cf. Eloxatin® even at twice the dose of oxaliplatin<sup>1</sup>*



- Mice were neurologically assessed and then administered 8 doses<sup>2</sup> either DEO (3.5 mg/kg platinum equivalents) or oxaliplatin (1.75mg/kg platinum equivalents) and then followed for 4 weeks with weekly neurological tests (Von Frey and Cold Plate methods)

<sup>1</sup> conducted in a validated mouse model at the University of Maryland, Baltimore

<sup>2</sup> treated twice weekly for 4 weeks; n=8 per group

## Broad potential for dendrimers to improve major drugs

- Starpharma's dendrimer nanoparticle technology has broad applicability
- Analysis shows dendrimers applicable to >50% of leading pharmaceuticals
- Significant potential in oncology
- Proof of concept in docetaxel, doxorubicin, oxaliplatin, methotrexate, gemcitabine, paclitaxel and testosterone

### Also Suited to:

- Proteins (eg. Insulin – partnered program), peptides
- Antibody Drug Conjugates or ADCs (Chemotherapeutic + antibody)

Brand	Molecule	Innovator Company	2012 Branded Sales (\$M USD)
Alimta	Pemetrexed	Eli Lilly	2,594
Eloxatin	Oxaliplatin	Sanofi Aventis	1,570
Vidaza	Azacitidine	Celgene	910
Taxotere	Docetaxel	Sanofi Aventis	760
Treanda	Bendamustine	Cephalon/Astellas	651
Abraxane	Albumin bound paclitaxel	Celgene	473
Gemzar	Gemcitabine	Eli Lilly	317
Camptosar	Irinotecan	Pfizer	176
Taxol	Paclitaxel	BMS	149
Doxil/caelyx	Pegylated doxorubicin	JnJ/Merck	83

**Nanomedicine-based oncology drug sales expected to grow to \$12.7B by 2016 (CAGR 18%)**

**Nanotechnology in Medical Applications: The Global Market BCC 2012**

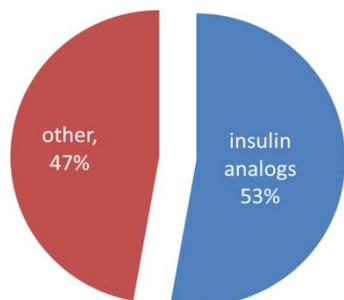
**Deals in Nanomedicine \$700M in 2013 Amgen, Pfizer, AZ (preclinical candidates)**

# Dendrimers for drug delivery – proteins and peptide drugs e.g. Insulin

## Opportunity

**US\$43B**

Global diabetes market (2013)  
(Reuters)

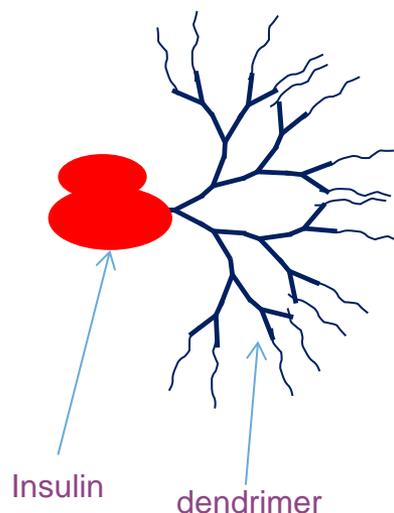


Market Share 2010  
(Business Insights)

**US\$6.3B**

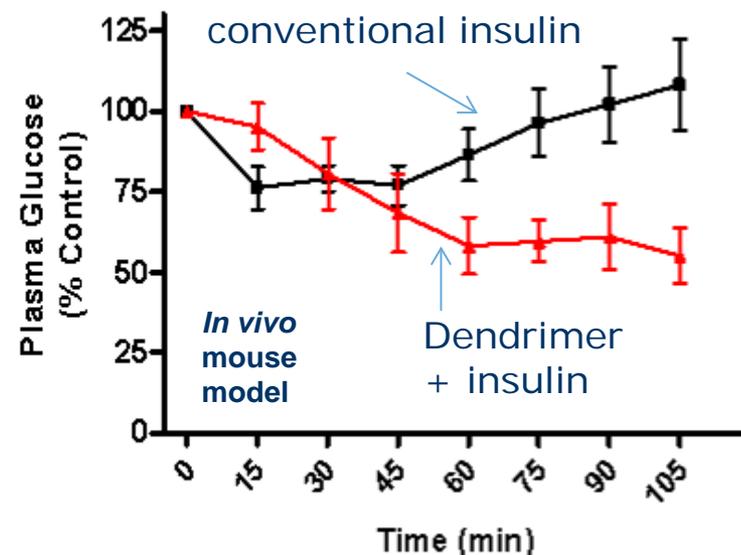
Sanofi's long acting insulin LANTUS (2012)  
(MedTrack)

## Technical Approach



<b>Approach</b>	Conjugate protein or peptide to functionalised dendrimer
<b>Benefit</b>	Control half life of protein or peptide therapeutics Reduce protein metabolism Improve dosing regimen

## Performance



<b>Result</b>	Dendrimer insulin shows prolonged suppression of blood glucose in vivo (early non-conf result shown above, only)
<b>Status</b>	Co-development program with undisclosed partner



**VivaGel® Portfolio**

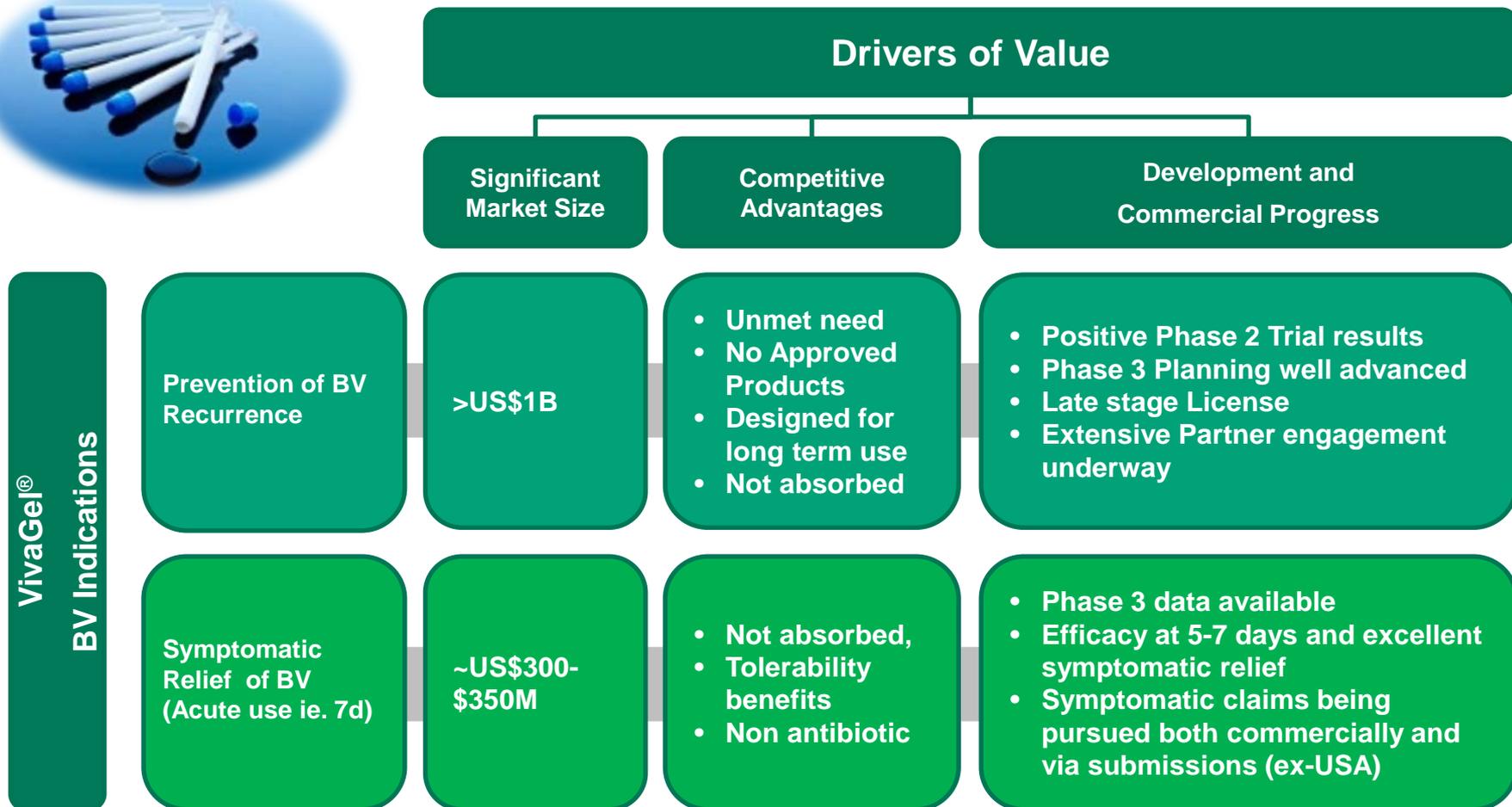
## Bacterial Vaginosis (BV): An attractive commercial opportunity and unmet need



- Bacterial Vaginosis (BV): the most common vaginal infection worldwide
- ~29% women infected in US<sup>^</sup>; up to 51% in certain demographics
- Caused by overgrowth of pathogenic bacteria\* & reduction of normal flora (lactobacilli spp.)
- BV causes unpleasant discharge, irritation; PID/infertility, preterm birth, increased risk STIs e.g. HIV
- Recurrent BV an issue in 50-60% of BV sufferers
- **BUT current antibiotic treatments have significant shortcomings:**
  - Low cure rates; high rates of recurrence and antibiotic resistance
  - Adverse features common: GI toxicity, 2<sup>o</sup> Candidiasis, incompatibility with alcohol and condoms
  - Not suitable for long term use
- No products approved to prevent BV Recurrence (market est. > US\$1B)
- Current global market for BV treatments : ~US\$300-350M

<sup>^</sup>14-49 yrs; \* *G. vaginalis*, *Bacteroides*

# VivaGel® for Bacterial Vaginosis: Two product opportunities



## BV Prevention of Recurrence: Partnering and market opportunity for VivaGel®

“It was like gone almost overnight”

“I would definitely use it again.”

“The next day I noticed a huge difference.”

“I would use it....I will use it indefinitely...”

– VivaGel® Trial Patients#

### Benefits of VivaGel®:

1. Designed for long term use
2. Not a conventional antibiotic
3. Not systemically absorbed
4. Lack toxicities associated with antibiotics
5. Selective antimicrobial effect
6. Odorless and colorless water-based gel
7. Rapid resolution of symptoms

“ It is estimated that 1 in 3 women will develop the condition [BV] at some point in their lives” \*\*

“ VivaGel® has the potential to tap into a large uncontested market with a product that will most likely be used on a long-term, chronic basis.

...this clearly represents a very significant commercial opportunity for SPL ”

Cannacord Genuity, 2013

“VivaGel® in BV could be a billion dollar product

Bell Potter - 2013



## Phase 2 BV Prevention of Recurrence: Results summary

- Double-blind exploratory Phase 2 trial in 205 US women (VivaGel® vs. placebo)
- 1% VivaGel® demonstrated reduced risk of recurrent BV and delayed time to first recurrence (35d vs. 5d)
- More than 80% of 1% VivaGel® users remained BV free at 16 weeks and had excellent symptomatic relief
- High levels of patient satisfaction (79% satisfied/extremely satisfied)
- VivaGel® was safe and well tolerated
- Phase 3 Trial planning well now advanced

R-BV Def.	R-BV Criteria	Treatment		Relative Risk Reduction (1% VivaGel® vs. Placebo)
		1% SPL7013 Gel (N=65)	Placebo Gel (N=61)	
1	FDA stipulated Amsel	12%	28%	56%
2	Patient symptoms & Amsel	17%	28%	39%
3	At least 3 of the 4 Amsel criteria	22%	34%	38%
4	Investigator's determination	20%	31%	36%

*“ as a clinician  
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  
80% of VivaGel® users remained BV  
free at 16 weeks.*

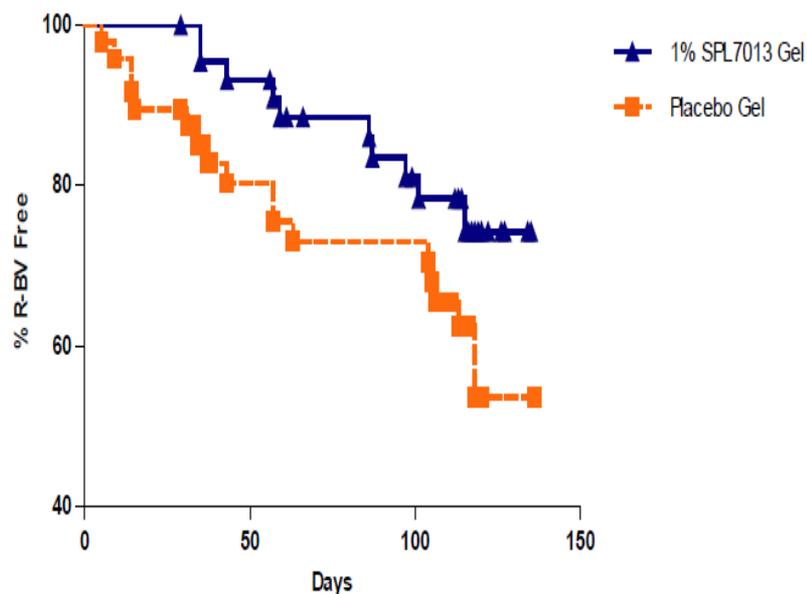
*I see this finding as highly  
promising  
– both for the management of women  
with this condition and for recurrent BV  
sufferers.”*

BV Expert (Prof. George Kinghorn, Dept. GU Medicine, Royal Hallamshire and Sheffield, UK)

# Phase 2 BV Prevention of Recurrence results – key findings

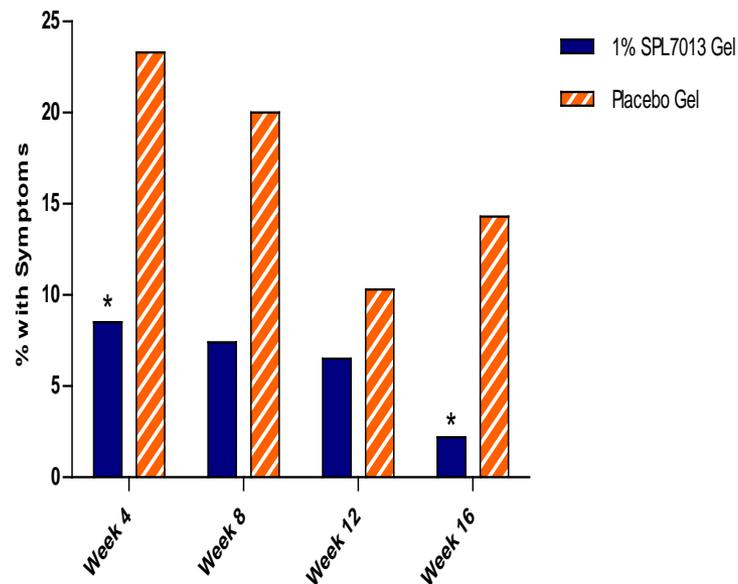
## Time to Recurrence

Time to Recurrence of BV, Baseline to Week 16 Visit, in Patients with a Screening Nugent Score of 4-10



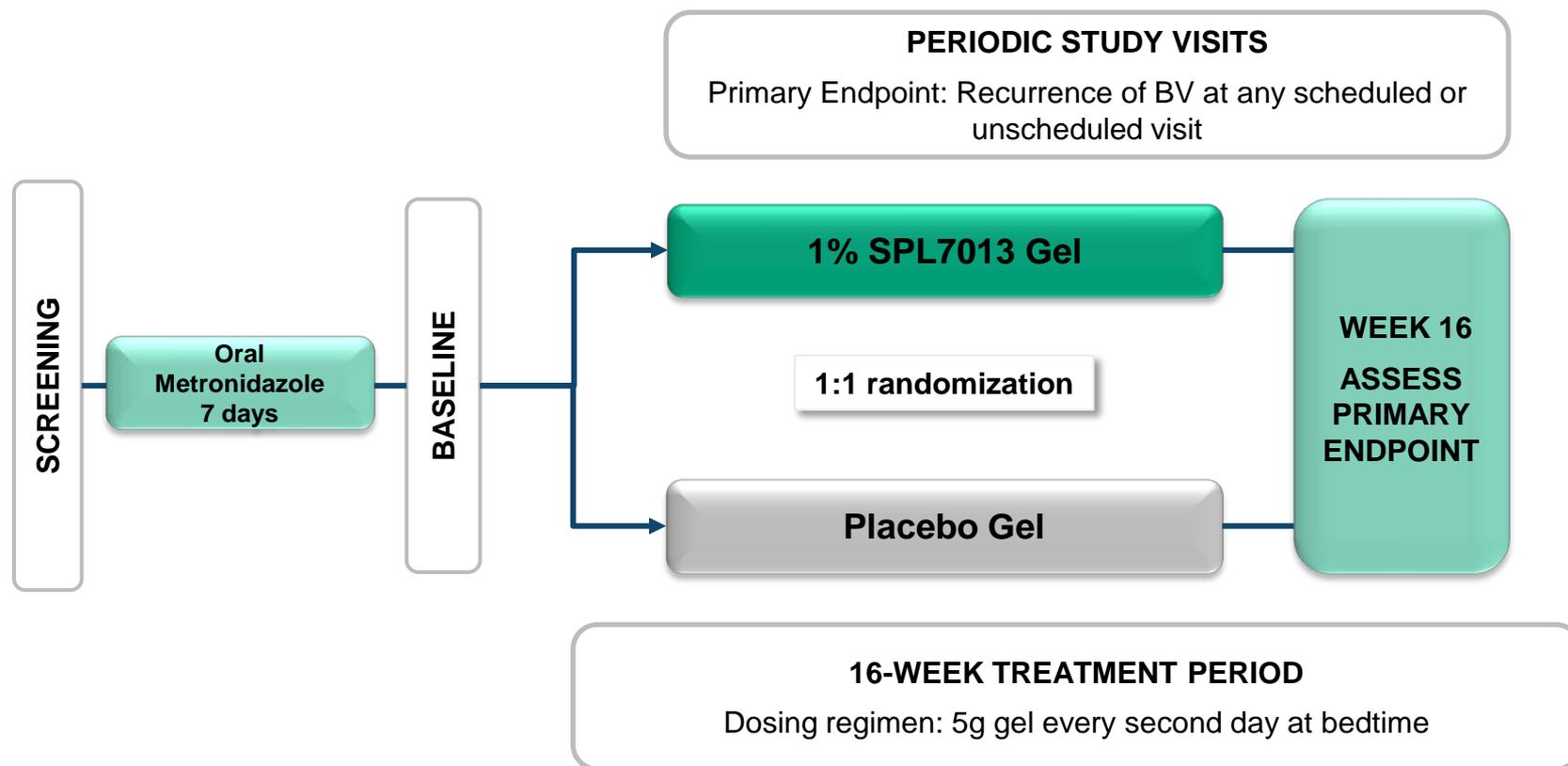
## Symptom Relief

Subject Reported BV Symptoms Since Last Visit



\* ( $P \leq 0.05$ ) vs. placebo

# BV Prevention of Recurrence : Proposed Phase 3 Trial Design



**Phase 3 Trial Planning well advanced:  
expected to commence in the next few months**

## VivaGel<sup>®</sup>: Symptomatic Relief of BV (7day acute use)



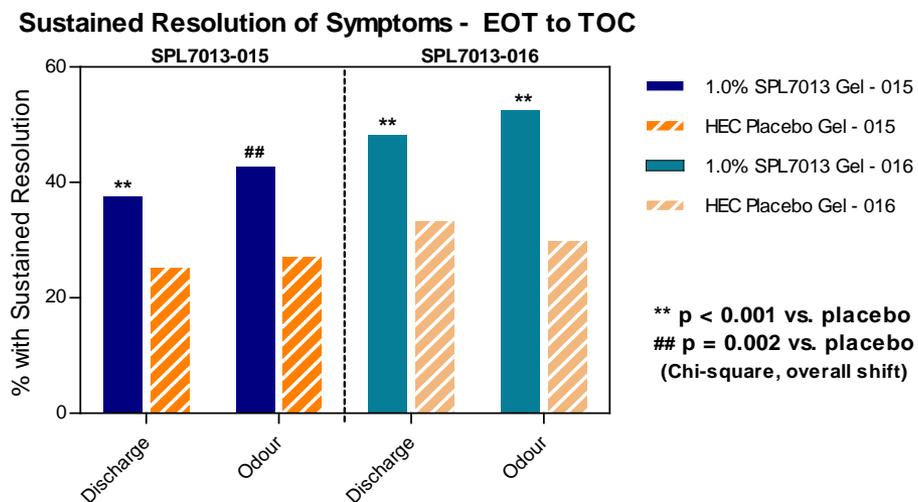
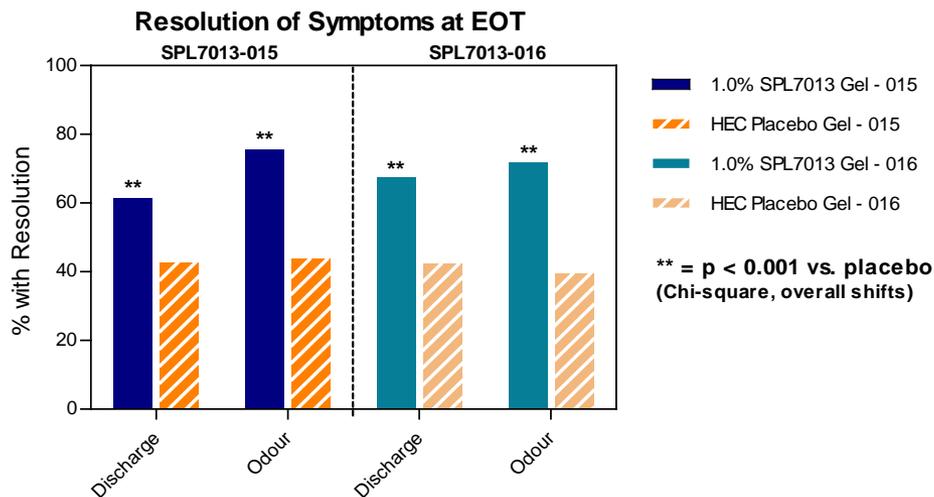
### Key Findings:

- VivaGel<sup>®</sup> (once a day for 7 days) demonstrated statistically significant Clinical Cure and effectiveness in treating symptoms of BV at the end of treatment (2-5 days: EOT)
- Primary FDA endpoint for Treatment (Cure at 2-3 weeks after cessation of treatment) not met
- VivaGel<sup>®</sup> treated women reported rapid and sustained relief from symptoms
- Patient acceptability very positive
- Excellent safety profile including very low rates of candidiasis (cf. other products)

### Given the excellent symptomatic relief shown for VivaGel<sup>®</sup> and very positive consumer feedback:

- A number of regulatory paths and claim strategies (e.g Symptomatic Relief) are being pursued with regulators and submissions are planned
- Symptomatic Relief Product rights under active discussion with a number of interested commercial partners

# Phase 3 Symptomatic Relief Data and Patient Experiences



*"It was like gone almost overnight"  
 – Patient*

*"The next day I noticed a huge difference."  
 – Patient*

*"I would definitely use it again. Especially since I know that it works, it's very effective."  
 – Patient*

*"the symptoms went away much quicker than the first one that I had." --Patient*

*"Yeah, it took care of the discharge and the odor and everything, and pretty much, I mean, within two days I seen that it was working."  
 Patient*

*"It did take [the odor] away, so that was my number one concern. And it worked, so I liked it..." – Patient*

*"Like I said, I thought it was effective....within the first day I noticed a change ..It was like gone almost overnight. No itching, no discharge." -Patient*

## VivaGel®-coated condom: A compelling and differentiated product

- Condom coated with patented antiviral (VivaGel®) which has been shown to kill  $\geq 99.99\%$  HIV & Herpes
- Licensed to Ansell and Okamoto
  - Consumer research, product positioning, package design, manufacturing validation undertaken
- Combination product /device route: Regulatory reviews underway
- Branded condom market: \$1.1B
- VivaGel® Patents to 2027

Partner	Market Position/Share	Major Brands
<p><u>Okamoto Industries</u> (listed on TSE)</p> 	<ul style="list-style-type: none"> <li>• No. 1 in Japan with ~60% Japanese market (the 2nd largest condom mkt. Est. ~US\$500M)</li> <li>• Total company revenues &gt;US\$760M</li> </ul>	<p>Skinless®</p>  <p>003®</p> 
<p><u>Ansell Limited</u> ASX:ANN</p> 	<ul style="list-style-type: none"> <li>• No. 2 globally for condom sales ~ 20% global share of branded market ~\$1.1B</li> <li>• Condom business growing ~18%</li> </ul>	<p>Lifestyles®</p>  <p>SKYN®</p> <p>ZERO®</p>  <p>Manix®</p> 

## VivaGel®-coated condom: A compelling and differentiated product

- Consumer research confirms strong interest in a condom that can also inactivate STIs
- In recent consumer research 86% of participants rated the VivaGel®-coated condom as “very interesting” with >90% saying they would buy it (participant quotes below)

*“I would buy this product right now if I could.....”*

*“I like the idea of a condom doing more for us than just being a barrier ....seems more reassuring to know it’s doing extra”*

*I would definitely buy this product without a shadow of a doubt .....*

*“I think that this product is amazing ..... This product is very special and interesting.*

*“I have rated this product a 5/5 as this is a major breakthrough in the condom market and for world health...”*



*Ansell has partnered with Starpharma to validate a process of coating an Ansell condom with unique VivaGel®. This ground breaking technology has been shown in lab trials to deactivate many viruses that cause STI’s. The dendrimer technology perfected by Starpharma over many years is supported by millions of dollars of clinical trials, and Ansell is fortunate enough to be the partner to help bring the resulting condom product to market. Regulatory review processes are already underway for this product with plans to commercialise this world-leading Condom technology in the near future.*



**2013 Ansell Annual Report**

# SPL7013 – A potential treatment for Viral conjunctivitis

- Adenovirus conjunctivitis is the most common viral conjunctivitis
- Painful, highly contagious and can lead to serious complications (including loss of vision)

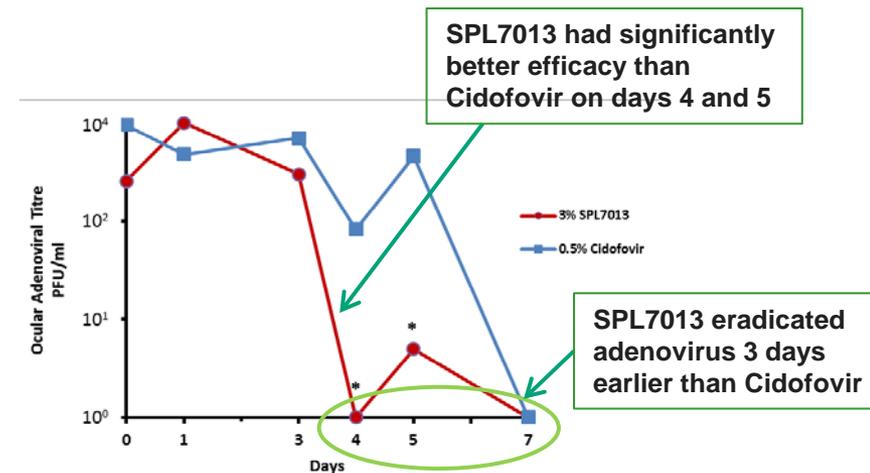


- No ophthalmic antiviral therapies exist for adenovirus
- Viral Conjunctivitis therapy market is estimated to be US\$700m#
- SPL's existing preclinical NDA data package for SPL7013 would minimise costs, expedite product development and increase appeal to commercial partners.
- Granted and further patent filings expected to provide protection to 2032

New Data:

SPL7013 shows superior antiviral performance

- SPL7013, tested in a validated rabbit model for Adenoviral Conjunctivitis, demonstrated significantly better antiviral efficacy than the experimental positive control, Cidofovir



\* p=0.05 ANOVA



**Agrochemicals**

US\$47B

Crop protection  
market (2012)  
Phillips McDougall

## Dendrimers in Agrochemicals

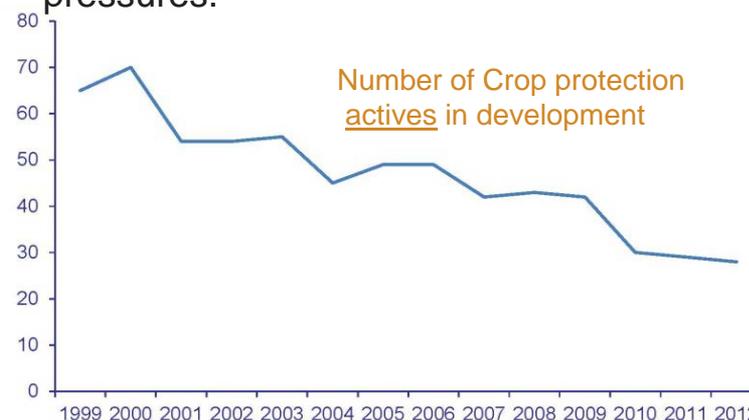
Dendrimers enhance existing agrochemicals and create patentable formulations in at least two ways:

- Improved formulation characteristics:
  - Solubility enhancement
  - Increased loading
  - Formulation stability
  - Reduction/removal solvents – “greener” formulations
- Improved biological performance:
  - Increased efficacy
  - Modification of soil penetration
  - Protection of Actives/Sequestration



### Significance for the agrochemical industry:

- Number of new actives in development by the industry are dropping due to regulatory and other pressures.



- Instead many organisations now focus on new formulations of existing actives but this creates a lower barrier to entry for competitors.
- New formulations using Priostar® dendrimers to create:
  - **superior** agrochemical formulations
  - a strong patent position as a **barrier to entry for competing products.**

# Progress in Starpharma's Agrochemical Program

## Partnered Programs

- Agreements now signed with majority of top 10 agrochem companies and many others.
- Further agreements in coming months
- Many "shots on goal"
- Limited SPL investment required

**>\$2B** Estimate of value of those products as sold **by our existing partners** today (the available market is much larger)

**40** Approximate number of actives that are now under agreement for evaluating / development with Priostar® by partners



**3 New Partnerships announced plus others with well known global Ag. companies (undisclosed)**

## Update on Internal Development Programs

- SPL is developing its own complete formulations of selected generic actives with enhanced characteristics
- A number of programs including glyphosate are underway with additional glyphosate field trials ongoing

### Programs including:

Active	Global Market	Proposition	Stage
Glyphosate	\$4-5B	Improved efficacy	Field Trials
Metolachlor	~\$550M	Improved formulation	Glasshouse
Pendamethalin	~\$350M	Improved formulation	Glasshouse
(herbicide)	~\$300M	Loading / Stability	Glasshouse
Imidacloprid	>\$1B	Improved efficacy	Lab testing
Carfentrazone	~\$100M	Improved formulation	Lab testing
(insecticide)	~\$600M	Improved efficacy	Lab testing
+ others (inc fungicides)			

**...the value of products coming off patent 2011-16**

Phillips McDougall, 2010 Sales Value, US\$

**>\$5B**

## Dendrimers: Multiple products with parallel revenue streams

Product/ Application	Commercial Strategy / Partnering Status	Potential Market (\$USD)	SPL Returns
VivaGel® Bacterial Vaginosis	Late stage license(s)	<ul style="list-style-type: none"> <li>Prevention Recurrence &gt;\$1B</li> <li>Symptomatic relief ~ \$350M</li> </ul>	Royalty/milestones Royalty/milestones
VivaGel®-Coated Condom	Partnered with Ansell and Okamoto	Branded Condom Market:\$1.1B	Royalties
VivaGel® Ophthalmic	Internal program: early partnering	Viral Conjunctivitis Mkt~ \$700M	Co-development/ royalty/milestones
Drug Delivery	<ul style="list-style-type: none"> <li>Multiple Partnered (Lilly, GSK, AZ, undisclosed)</li> <li>Docetaxel andOxaliplatin</li> </ul>	<ul style="list-style-type: none"> <li>Multiple Partner Funded</li> <li>Multi billion docetaxel sales</li> <li>Multi billion oxaliplatin sales</li> </ul>	Royalty/milestones Royalty/milestones Royalty/milestones
Agrochemicals	<ul style="list-style-type: none"> <li>Multiple Partnered; Nufarm, MA &amp; undisclosed</li> <li>Internal: glyphosate, solvent removal, others</li> </ul>	<ul style="list-style-type: none"> <li>Multiple Partner Funded</li> <li>Internal : ~\$5 B (glyphosate) and others</li> </ul>	Royalties Royalties

## Expected Short-Medium Term Newsflow

### VivaGel® Portfolio:

- Commence Phase 3 Prevention of Recurrence BV VivaGel® trial
- Progress regulatory submissions for Symptomatic Relief BV product in selected regions
- Advance license discussions for Symptomatic Relief BV product
- VivaGel®-coated Condom approvals and launch by partners

### Dendrimer Drug Delivery technology:

- Commence Phase 1 Dendrimer-Docetaxel clinical trial
- Report interim data from Dendrimer-Docetaxel clinical trial
- Complete preclinical development for Dendrimer Enhanced Oxaliplatin and advance to Phase 1
- Additional delivery candidates identified and progressed into pre-clinical studies
- Partnered program announcements (existing) and new deals

### Dendrimers in Agrochemicals:

- Advance internal candidates in agrochemicals incl. glyphosate (Roundup®)
- Partnered program announcements (existing) and new deals

### Corporate

- Rob Thomas to join the Board

## A platform technology with broad optionality and applicability

### VivaGel®

#### Lead internal program:

VivaGel® for the treatment and prevention of Bacterial Vaginosis.

#### Partnered development programs:

**Ansell**



### Agrochemical

### Drug Delivery

**Lead internal program:**  
dendrimer-docetaxel  
(Taxotere®)

**Partnered development programs:**

AstraZeneca  *Lilly*



**Lead internal program:**  
dendrimer-glyphosate  
(Roundup®)

**Partnered development programs:**

**Gowan®**  
The Go To Company



MAKHTESHIM  
A G G A N

