





#### **ASX ANNOUNCEMENT**

#### AGM – Chair address and CEO presentation

**Melbourne, Australia**; **19 November 2015**: 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 2.00pm 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 and medical uses. Starpharma has three core development programs: VivaGel® portfolio, DEP™ drug delivery, and agrochemicals with the Company developing a number of products internally and others via commercial partnerships.

Starpharma's lead products are based on VivaGel® (SPL7013, astodrimer sodium), a proprietary dendrimer which has antimicrobial properties. VivaGel® formulated as a water based gel and delivered vaginally now has EU regulatory approval for topical treatment and rapid relief of bacterial vaginosis (BV) and is under clinical development for the prevention of recurrent BV. Starpharma has also signed separate licence agreements with Ansell Limited (ASX:ANN) and Okamoto Industries. Inc., (TSE: JP3192800005) to market a value-added, VivaGel® condom. The VivaGel® condom is available for purchase in Australia under Ansell's Lifestyles® Dual Protect™ brand. Ansell manufactures and sells leading condom brands worldwide, including LifeStyles®, ZERO® and SKYN®. Okamoto is the market leader for condoms sold in Japan, which is the world's second largest condom market.

In the wider pharmaceutical field, Starpharma has both partnered and internal programs in Drug Delivery. A number of dendrimer-enhanced, or DEP® versions of existing drugs are under development. The most advanced of these is DEP® docetaxel, a dendrimer-enhanced version of docetaxel (Taxotere®), which is in clinical development in patients with solid tumours. In preclinical studies DEP® docetaxel has shown significant tumour-targeting and superior anti-cancer effects across a range of important cancer types including breast, prostate, lung and ovarian tumour, when compared to Taxotere® (docetaxel). AstraZeneca has signed a licensing agreement with Starpharma for the use of its DEP® drug delivery platform in the development and commercialisation of an AstraZeneca oncology compound, with potential for follow on compounds directed at a defined family of targets.

In agrochemicals Starpharma has a series of partnerships with leading industry players including global leader Adama (formerly Makhteshim Agan) as well as internal programs including an enhanced version of glyphosate (the active ingredient in Roundup®). For more information please visit: <a href="https://www.starpharma.com">www.starpharma.com</a>

#### FOR FURTHER INFORMATION

Media: Buchan Consulting Rebecca Wilson Mob: +61 417 382 391

rwilson@buchanwe.com.au

#### Starpharma:

Dr Jackie Fairley, CEO Nigel Baade, CFO and Company Secretary +61 3 8532 2704 investor.relations@starpharma.com

#### **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 fillings 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**

#### **19 November 2015**

Good afternoon and welcome to Starpharma's Annual General Meeting for 2015.

It is with pleasure that I welcome you to this Annual General Meeting after what has been another very successful year. Starpharma has achieved a number of important milestones and the Board is confident of further exciting times in the year ahead.

Starpharma remains one of Australia's most innovative biotechnology companies with a platform technology supporting three unique and interrelated development programs: VivaGel®, drug delivery and agrochemicals. These three programs have multiple products under development ranging from pre-clinical, clinical and recently approved through to products on market. We also have strong and successful partnerships with some of the world's leading pharmaceutical and agrochemical companies to leverage commercialisation of our technology and accelerate product development whilst maximising our invested capital.

One of our most exciting areas of advancement this year has been the progress of our DEP™ drug delivery platform, evidenced by the signing of the multi-product licensing deal with global pharmaceutical company, AstraZeneca. This important deal follows a highly successful collaboration and its quantum and breadth clearly illustrates the commercial potential and platform nature of Starpharma's DEP™ drug delivery technology.

The deal will see AstraZeneca develop and commercialise certain compounds using Starpharma's DEP<sup>TM</sup> drug delivery technology. Starpharma has already received a US\$2 million signature payment, with total eligible milestone payments of up to US\$126 million for the first AstraZeneca DEP<sup>TM</sup> product, in addition to royalties on net sales of the product. Importantly, all development and commercialisation activities, including clinical costs, will be funded by AstraZeneca. The license is also structured to allow and encourage AstraZeneca to develop multiple DEP<sup>TM</sup> based products within the agreed family of targets, for which Starpharma is eligible for up to US\$93 million for each subsequent AstraZeneca DEP<sup>TM</sup> product, plus royalties. Critically, Starpharma's DEP<sup>TM</sup> platform,

including the company's wholly-owned DEP<sup>™</sup> docetaxel product, remains unencumbered and available for licensing in the vast majority of oncology and other applications for future deals. This supports Starpharma's strategy and intent to sign multiple such partnerships for DEP<sup>™</sup> in the future. We are also very pleased with the progress of our DEP<sup>®</sup> docetaxel phase 1 clinical study – our first in man anti-cancer treatment - which is being conducted here in Australia. Patients have received doses significantly above the recommended dose of docetaxel with no neutropenia, and no hair loss having been observed. In contrast, neutropenia occurs in around 75% of patients taking the recommended dose of standard docetaxel.

The lack of neutropenia is important, as it reduces the probability that patients will become vulnerable to life-threatening infections due to an abnormally low count of white blood cells. Also encouragingly, a significant proportion of patients treated with DEP<sup>TM</sup> docetaxel have shown potential efficacy signals in a range of tumours, including some which docetaxel would not normally be expected to be effective in. In addition, there is potential for DEP<sup>TM</sup> docetaxel to be better suited for use with certain cancer immunotherapy regimes which require normal white blood cell levels. We have thus started preparations in parallel, for the subsequent clinical studies of DEP<sup>TM</sup> docetaxel to enable us to move rapidly from phase 1 into phase 2.

In the VivaGel® portfolio, we have also achieved significant milestones with EU marketing approval received for VivaGel® BV for the topical treatment and rapid relief of bacterial vaginosis. This European approval allows the product to be marketed in the European Economic Area - a population of more than 260 million women and facilitates further approvals in additional countries and Negotiations for marketing rights to VivaGel® BV are well advanced with a number of potential commercial partners.

Our two phase 3 clinical trials for VivaGel® to prevent the recurrence of bacterial vaginosis continue to progress smoothly with over 100 sites actively recruiting patients and recruitment now well in excess of 50%. The commercial opportunity of VivaGel® BV for the prevention of recurrence of BV was also recently enhanced with the granting of an additional US patent providing a 7 year extension of the patent term to at least 2032.

The VivaGel® condom, under Ansell's LifeStyles® Dual Protect brand, has now been rolled out to pharmacies nationally in Australia, including Chemist Warehouse. In parallel, we have made

substantial regulatory progress in other commercially important geographies and Starpharma expects the VivaGel® condom will be approved and launched into a number of additional markets over the coming year.

Good progress has been made in agrochemicals with a number of new Priostar® agreements have been signed or extended with major agrochemical companies for the European, Asian and North American markets.

Starpharma's business strategy of advancing its own lead products and in parallel with an active partnering program for DEP™ and Priostar® allows us to commercialise multiple products concurrently and has resulted in Starpharma owning a deep and robust portfolio of products.

It is encouraging that the national dialogue is increasingly placing greater importance on innovation for Australia's economic future. This is something which Starpharma is at the forefront of and is well placed to capitalise on.

I would like to thank my fellow board members for all their assistance. In particular, I would like to acknowledge Dr Peter Jenkins, one of Starpharma's founding directors who retires from the Board after today's annual general meeting. We are very indebted to Peter for his guidance over this time.

I would also like to thank our Chief Executive Officer Dr Jackie Fairley, her management team and staff. Our progress and extraordinary achievements across the portfolio with a small team of 35 employees are testament to their hard work. The potential for Starpharma to have a major impact on global health issues is truly significant as the advantages of our dendrimer products demonstrate.

Finally, I would like to thank our shareholders for their ongoing support during this very successful year. We do not take your support for granted and the focus of Jackie and her team is driven by the desire to produce significant commercial returns for our shareholders from our product and platform of opportunities.

Our success is the sum of many parts and I look forward to another successful and exciting year for Starpharma and our shareholders.

Thank you,

Rob Thomas, AM





**19 November 2015** 



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## **Summary**



## Three business areas: DEP™ drug delivery platform, VivaGel® and Agrochemicals supporting a deep portfolio of products under development or on market

- DEP™ drug delivery platform has the potential to produce a portfolio of new DEP™ products with multiple revenue streams
  - Multi product DEP™ license with AstraZeneca valued up to US\$126M in milestones
    plus royalties (first product) and up to US\$93M plus royalties for subsequent products
  - DEP<sup>™</sup> docetaxel and internal DEP<sup>™</sup> pipeline has potential to deliver multiple and high value additional deals
  - DEP™ based partnered programs in place and under discussion with multiple leading pharmaceutical companies
- VivaGel® portfolio focused on women's and sexual health
  - VivaGel<sup>®</sup> condom launched in Australia with further approvals and launches to follow
  - VivaGel® BV Two products for Bacterial Vaginosis first approved in Europe, second in phase 3 clinical trial
- <u>Agrochemical program</u> based on SPL's novel dendrimer technology with extensive commercial partnerships plus internal programs
- Strong cash position: Cash balance of A\$26.1M (Sept 2015)

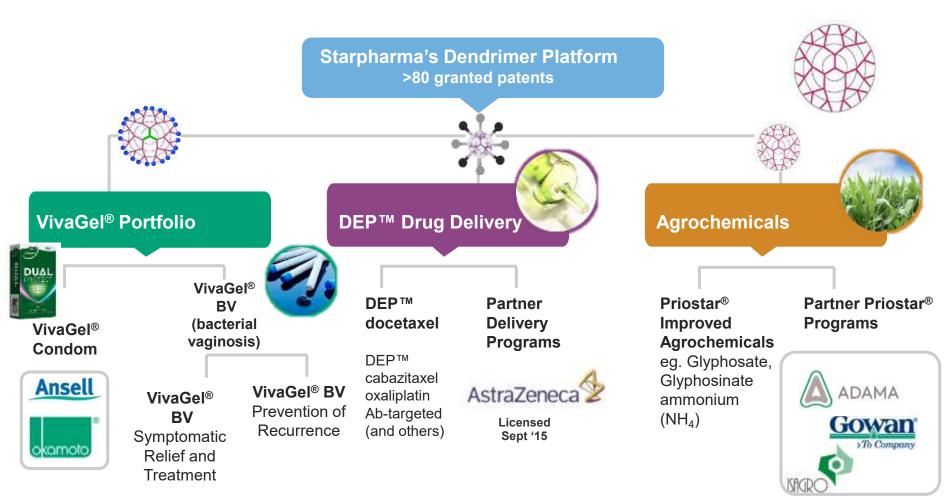


Starpharma's headquarters and laboratory Melbourne, Australia



## Starpharma is a global leader in dendrimer nanoparticles

Starpharma's portfolio: a mix of internal programs and commercial partnerships with leading companies



# 2014-15: Substantial and strategically important milestones achieved



**SEP 2015** 



Multi-product Licence signed with AstraZeneca: development, launch and sales milestones for the first AstraZeneca DEP™ product of up to USD\$126m plus royalties (USD\$93m plus royalties for 2<sup>nd</sup> and subsequent)

**SEP 2015** 



**EU Approval for VivaGel® BV** for treatment and rapid relief of BV including symptoms. 28 countries of the EU & EFTA; population of >260 million women.

**OCT 2015** 





Antibody targeted DEP™ conjugate resulted in complete tumour regression and 100% survival in an ovarian cancer model and outperformance vs. leading ADC.



FY16

FDA Grants SPA for Phase 3 Recurrent BV Trial

VivaGel® condom receives TGA device certification

A\$18 million placement

VivaGel<sup>®</sup> condom approved DEP™ docetaxel longer duration, increased exposure

\$4.2M R&D tax incentive refund Priostar Glyphosate Patent in China NZ Marketing Clearance for VivaGel condom DEP<sup>TM</sup>
Docetaxel
Trial Dose
Exceeds
Common
Taxotere Dose
Level

AstraZeneca multiproduct licence for DEP<sup>TM</sup> technology

Additional US Patent Granted for VivaGel® BV

\$3.4M R&D tax incentive

## **Recent Media Coverage for SPL**



# FINANCIAL REVIEW THE AGE

### AstraZeneca deal lifts Starpharma shares 21pc

Starpharma boss Jackie Fairley said her licensing deal with AstraZeneca is hard proof the Australian nanotechnology pioneer's drug delivery platform could be worth billions.

## The Sydney Morning Herald

### THE AUSTRALIAN\*

## Starpharma wins EU approval for VivaGel

Starpharma has been granted approval to market its VivaGel BV in the European Union's 28 member countries, where more than 260 million women live.



### THE AUSTRALIAN\*

## Cancer trial results prove good medicine for biotech's stocks

Starpharma's shares have hit a fresh high following positive results in a preclinical trial for its ovarian cancer model. The company said a cancer drug treatment coupled with its DEP<sup>TM</sup> technology had resulted in complete tumour regression and 100% survival in a preclinical cancer trial on mice.

# THE WALL STREET JOURNAL.

# Australia Looks to Health Care as Remedy for Resource-Slump Doldrums

Australia is taking a page from Silicon Valley's playbook as it seeks to reinvigorate its resource-dependent economy at the end of a long commodities boom, placing bets on biotechnology and digital health care. Starpharma is featured in the article for its drug delivery technology and recent licensing deal with AstraZeneca.

## THE AUSTRALIAN\*

## Starpharma signs AstraZeneca deal

Starpharma has inked a potential billion dollar-plus deal with pharmaceutical giant AstraZeneca for the use of its drug delivery technology. AstraZeneca will use Starpharma's technology to develop and commercialise specific cancer drugs, leaving the rest of the oncology space open for Starpharma to further commercialise DEP with third parties.



## **Starpharma's Product Portfolio**

EU Approval Sept. '15

			Res	PC	Phl	PhII	PhIII	Reg.	Mkt
	VivaGel® BV	BV Symptomatic Relief							
Antimicrobial / Antiviral	VivaGel® BV	BV Prevention of Recurrence							
(SPL7013)	VivaGel <sup>®</sup> Condom	Ansell							
	Drug Delivery	DEP™ docetaxel (various cancers)							
Oncology (Internal)	Drug Delivery	DEP™ oxaliplatin DEP™ carbazitaxel DEP™ TDCs							
	Drug Delivery	Various Oncology DEP™			Astra	aZeneca			
Partnered programmes	Drug Delivery	DEP™ Delivery – oncology, diabetes etc.			7300				







DEP™ Drug Delivery

## **DEP™ Drug Delivery Platform**



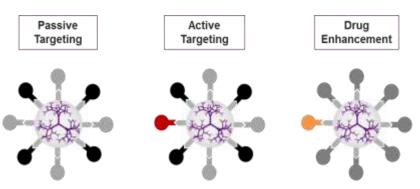
- DEP™ dendrimer (nanoparticle) delivery technology shows broad commercial applicability
- Internal development and partnered program allows for accelerated development and increased returns
- Applicable to both currently marketed/generic and proprietary pharmaceuticals
- Potential across multiple diseases cancer, inflammation, diabetes,
- High commercial value opportunity, significant optionality via multi-product application

DEP™ Pro	duct Portfolio		Research	Pre- clinical	Phase I	Phase II	Phase III	Reg approval
	Drug Delivery	DEP™ docetaxel (various cancers)						
Oncology (Internal)	Drug Delivery	DEP™ oxaliplatin DEP™ carbazitaxel DEP™ TDCs						
` '	Drug Delivery	Various Oncology DEP™					A	
Partnered programmes	Drug Delivery	DEP™ Delivery – oncology, diabetes etc.			As	straZe	neca 🏖	Cor
								Pla



## Starpharma's DEP™ Platform in Drug Delivery

A highly versatile platform with significant commercial and therapeutic benefits



49	DEP™ dendimer	Precisely manufactured poly-lysine dendrimer (variable size) Manufactured using standard chemistry
•	Toxin/Drug/Payload	Small molecule, Cytotoxic, Ultratoxic
•	Targeting group	Whole antibody, fragment, mimetic, small molecule
0	PEG	Provides stealth; solubility; control clearance; flexibility in size
•	Drug to be enhanced	Molecule requiring enhanced PK, PD, solubility or elimination of off target toxicities , expansion of therapeutic window

	i dient protection reaterision	
Commercial	Innovative treatment options	✓
Benefits	Competitive product advantages	✓
	Robust, scalable manufacturing	✓
	Flexible platform with broad applicability in targeted therapies	✓
Therapeutic Benefits	Enhanced product properties – increased solubility; enhanced PK and efficacy; better side effect profile	✓
	Greater homogeneity with higher payload ratio than conventional ADC approaches	✓
	Enhanced therapeutic window	✓

Patent protection /extension



## **DEP™ Drug Delivery**

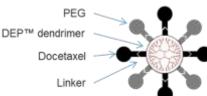
Improved solubility

## **Dual Strategy**

Provides technical, IP and financial leverage Increases commercial opportunities
Reduces invested capital
De-risks



- Application to established drugs
- · Self funded
- Return through licensing after early clinical development
- eg. DEP<sup>TM</sup> docetaxel



- Application to partner drugs (typically proprietary)
- Platform with broad optionality
- Funded development
- Return through milestones and royalties
  - · eg. AstraZeneca



Extensive partner engagement to maximise commercial outcomes



## Starpharma's DEP™ Delivery License with AstraZeneca (LON:AZN)



- AZ multi-product license for use of DEP™ delivery platform for the development and commercialisation of proprietary AZ compounds directed at a defined family of targets
- SPL eligible to receive development, launch and sales
  milestones for the first AZ DEP™ product of up to USD\$126m
  plus royalties & up to USD\$93m in milestones for each
  subsequent qualifying AZ DEP™ products
- Tiered royalties on net sales
- AZ funds all development and commercialisation costs
- DEP™ docetaxel not impacted and agreement field allows for multiple other DEP™ licences

"SPL estimates that each product successfully commercialised under this agreement could be worth around US\$450m to Starpharma and, depending on the range of indications and degree of commercial success in the market, potentially significantly more"

"We already have a long-standing and successful working relationship with Starpharma. This license agreement will enable us to further harness the DEP™ technology and evaluate its potential across novel molecules within our oncology portfolio."

Dr Susan Galbraith,

Head of the Oncology Innovative Medicines Unit at AstraZeneca





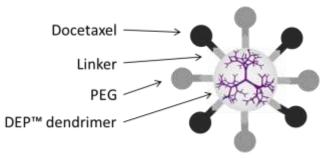
## **Starpharma's DEP™ Docetaxel: Multiple Benefits**

- Docetaxel (Taxotere®) is a blockbuster chemotherapeutic
- Docetaxel sales: US\$3.1B (2012)
- Docetaxel is used in major cancer types including breast, prostate, lung cancer and ovarian
- Starpharma's patented DEP™ docetaxel is a nanoparticle formulation with multiple advantages compared to Taxotere®
- DEP<sup>™</sup> patents filed will offer coverage to 2032 (potential for further filings)
- DEP<sup>™</sup> docetaxel Phase 1 trial in Australia progressing well;
   promising preliminary findings with good tolerability

#### **DEP™** docetaxel vs. Taxotere®

- Elimination of major dose-limiting side effect (neutropenia)
- Detergent-free formulation (less toxic)
- 3. Tumour-targeting (40-70x more)
- 4. Extended duration (half-life)
- Improved efficacy (breast, ovarian, prostate)







## **DEP™ Docetaxel Clinical Program**

### Phase 1 Clinical Trial: Encouraging anticancer activity and no neutropenia

Underway at 4 Australian sites\*; open label study, estimated sample of 25-30 cancer patients (various solid tumours)

#### **Current Status:**

- DEP<sup>™</sup> docetaxel administered intravenously (no steroid pre-treatment required)
- Several dosed with multiple cycles (up to 6 cycles)
- Dose-levels up to 105mg/m<sup>2</sup> (commonly used Taxotere<sup>®</sup> dose 75mg/m<sup>2</sup>)
- Now more than 2/3 recruited
- Dose optimisation and expansion now underway to identify dose for Phase 2

Interim Findings: DEP™ docetaxel well tolerated with encouraging anticancer activity:

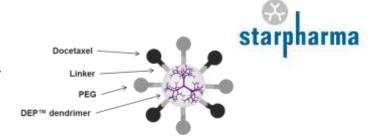
- No neutropenia (docetaxel DLT) or alopecia reported at doses up to & including 105mg/m²
  - Taxotere® PI indicates severe neutropenia suffered by 75% of patients given 60mg/m²
- A significant proportion of DEP™ docetaxel patients have exhibited efficacy signals/anticancer activity including in cancers not expected to be responsive to docetaxel:
  - Efficacy signals include pancreatic cancer stable disease over > 20 weeks; prostate, lung, head & neck, gastric
- Enhanced pharmacokinetics demonstrated for DEP™ docetaxel (longer half-life, higher AUC and lower Cmax)

#### Phase 2:

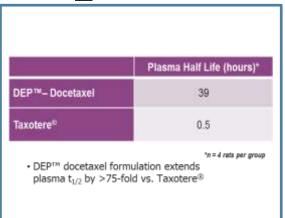
Planning now underway with CROs and key opinion leaders for conduct of Phase 2 Trial including design and indications; clinical trial material manufacture underway

## **DEP™ Docetaxel Preclinical Findings:**

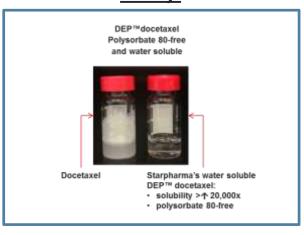
### Multiple advantages - Better efficacy and less toxicity



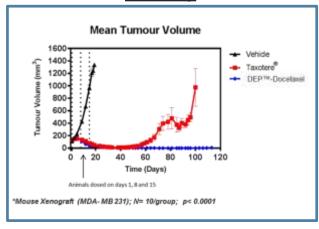
### T<sub>1/2</sub> and Targeting

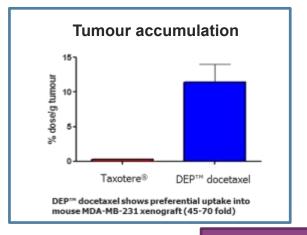


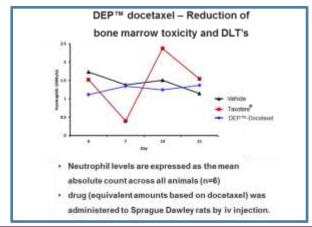
#### Safety

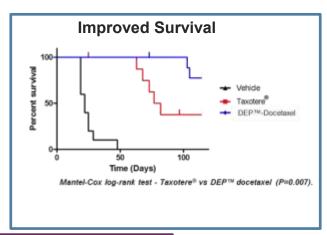


#### **Efficacy**









Patents filed will offer coverage to 2032 (potential for further filings)

## DEP™ Docetaxel Pharmacokinetics (PK) in Humans cf. Taxotere®^ Enhanced PK in humans



#### 1. Extended duration of exposure with DEP™ docetaxel

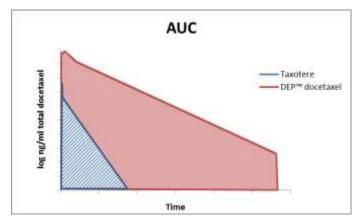
 DEP<sup>™</sup> docetaxel plasma half-life substantially longer (~8 x) than Taxotere<sup>®</sup> (~150x longer in the initial, rapid phases of plasma clearance)

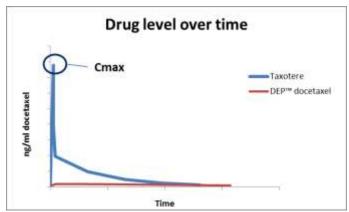
#### 2. Increased extent of exposure with DEP™ docetaxel

- DEP™ docetaxel drug exposure or Area Under the Curve
   (AUC) for total docetaxel, ~500-800x greater than an equivalent dose of docetaxel administered as Taxotere®
- Reflects the gradual release of docetaxel (DEP<sup>™</sup> docetaxel acts as a 'depot' of docetaxel)

#### 3. Reduced peak drug levels with DEP™ docetaxel

 Cmax (peak blood level) of docetaxel is substantially (~50-100 times) lower for DEP™ docetaxel than Cmax of an equivalent dose of docetaxel administered as Taxotere®





Example plasma drug levels over time DEP™ docetaxel vs.Taxotere®)

<sup>^</sup> Taxotere® parameters based on published data (Bruno et al, 1996)





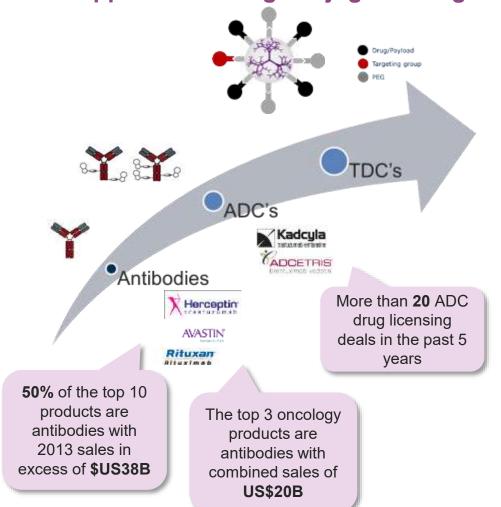
## **Compelling Product Benefits for DEP™ Docetaxel**

Aspect	DEP™ docetaxel	Starpharma Benefit
Manufacture	Standard chemistry	SPL dendrimer manufacture is readily scalable and validated through extensive FDA input
Stability	Excellent stability	Important for drug approval, storage and subsequent shelf life
Drug loading w/w	25%	SPL delivers higher dose per mg of drug
Particle size	10-15nm	Smaller particles enter tissues more easily
Tumour concentration of active	30-60x	Higher level of docetaxel delivery to tumour SPL - better efficacy & reduced toxicity
Plasma half life	>50 hours	Longer duration of effect, less frequent dosing and greater anti-cancer effect
Enhanced solubility	water soluble; ~ 20,000 fold increase	Water soluble; safer formulation (see "polysorbate 80" below)
Neutropenia prevented	Yes	Avoids risks & need for expensive rescue therapies and hospitalisation
Polysorbate-80 (detergent) used	No - cortisone pre-treatment is not required	Avoids potentially fatal toxicities with polysorbate-containing formulations



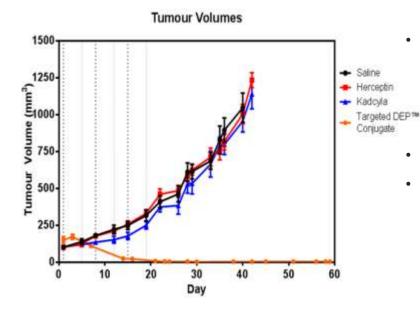


# Targeted DEP™ Conjugates (TDCs) A new approach to drug conjugate design



## Starpharmas Targeted DEP™ conjugates Can use small molecule, whole antibody, antibody fragments or antibody mimetics Bind with high affinity and specificity Highly efficacious in cancer model in vivo Flexible and tailored to suit clinical requirements Homogeneous Standard Chemistry yielding consistent, reproducible, stable molecules Platform (DEP™ docetaxel) already in the clinic and demonstrated to be safe and well tolerated

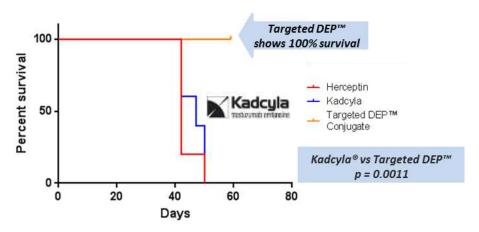
# starpharma Targeted DEP™ outperforms leading treatments in ovarian cancer model



\*SKOV-3 (HER-2) Ovarian cancer xenograft
in NOD-SCID mice (5-6/group)
Saline, Kadcyla (10mg/kg) and Targeted DEP™ conjugate were
dosed once/wk for 3 wks; Herceptin (20mg/kg) dosed twice/wk for 3
wks. p=0.0011

- SPL's novel antibody-targeted DEP™ conjugate resulted in complete tumour regression and 100% survival in an ovarian cancer model
  - The antibody-targeted DEP™ conjugate (using Herceptin as the targeting group) significantly outperformed both Roche's Kadcyla® (T-DM1) and the monoclonal antibody Herceptin® (Trastuzumab) alone
  - Targeted DEP™ of significant commercial interest in partnering
  - Patent filings underway

#### **Kaplan Meier Survival Curve**





## **DEP™** Platform and Further Development Candidates

- SPL's dendrimer enhanced product (DEP™) nanoparticle technology
  - √ has broad applicability, especially in oncology
  - ✓ allows for new patent filings creating proprietary products
- Proof of DEP™ concept for docetaxel, cabazitaxel, doxorubicin, oxaliplatin, methotrexate, gemcitabine and paclitaxel, proteins (insulin), peptides and targeted agents (ADCs)
- A number of additional DEP™ candidates from the list below are currently in preclinical testing

Brand	Generic Name	Type of Drug	Innovator Company	2014 Sales / Peak Sales prior to loss of exclusivity (US\$M)
Alimta	Pemetrexed	Anti-metabolite	Eli Lilly	2,792
Eloxatin	Oxaliplatin	Cytotoxic	Sanofi Aventis	2,293
Gemzar	Gemcitabine	Anti-metabolite	Eli Lilly	1,720
Camptosar	Irinotecan	Cytotoxic	Pfizer	1,100
Jevtana	Cabazitaxel	Cytotoxic	Sanofi Aventis	363



Saline

Cabazitaxel

DEP(TM)

cabazitaxel

**Tumour Volumes** 

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 Day

**Tumour Volumes** 

## **DEP™ Cabazitaxel Pre-clinical Efficacy**

## About Cabazitaxel (Jevtana®)

- 2014 sales: US\$363m (est. US\$500m by
   2018)
- Primary indication Prostate cancer
- In clinical development for various other cancer including Breast, Bladder, Head and Neck and others
- Dose Limiting Toxicity neutropenia (FDA "Black box" warning)

1800

1600

1400

1200 1000

800

400

200

<sup>200</sup>  Cabazitaxel Tumour regrowth FDA "Black box" warning due to rumour Volume (mm³) DEP(TM) cabazitaxel **JEVTANA** anaphylaxis (Polysorbate 80 detergent) (cabazitaxel Tumour regression DEP™ cabazitaxel vs Cabazitaxel P < 0.01 (cabazitaxel Complete tumour regression 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 \* MDA-MB-231 (human breast tumour) xenograft model in Balb/c nude mice Day

<sup>21</sup> 



#### VivaGel® Portfolio



- VivaGel® is a proprietary antimicrobial dendrimer active in HIV/HSV/HPV and Bacterial Vaginosis
- VivaGel® BV (bacterial vaginosis)
  - Symptomatic Relief EU approved, commercial discussions underway; launch expected 2016
  - Prevention of Recurrent BV Phase 3 clinical program (under SPA) underway in North
     America, Europe, and Asia
- VivaGel® (antiviral) condom rights licensed to Ansell and Okamoto; launched in Australia,
   regulatory processes underway for multiple other regions
- Commercial discussions underway for supply of VivaGel® condom to Chinese Government Market

VivaGel Product Portfolio		Research	Pre- clinical	Phase I	Phase II	Phase III	Reg. approval	Market launch	
	VivaGel® BV	BV Symptomatic Relief							
Antimicrobial / Antiviral (SPL7013)	VivaGel® BV	BV Prevention of Recurrence					$\rightarrow \Rightarrow$		
	VivaGel <sup>®</sup> Coated Condom	Ansell							

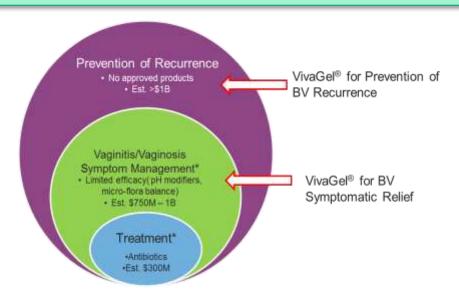




# Bacterial Vaginosis and VivaGel® BV: Two product opportunities

#### **Bacterial Vaginosis (BV):**

- Most common vaginal infection worldwide
- ~29% women infected in US; up to 51% in some groups
- Recurrent BV an issue in 50-60% of BV sufferers
- Current therapies have low cure rates and nasty side effects
- No approved products for Recurrent BV (R-BV)



- "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..."

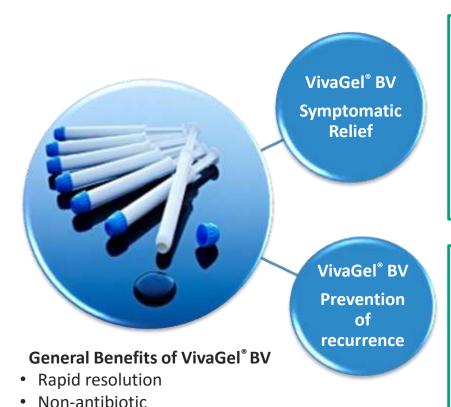
➤ VivaGel® BV Trial Participants

#### **VivaGel® BV: Product Proposition**

- a <u>non-antibiotic therapy</u>
- management of BV symptoms and prevention of R-BV
- a selective antimicrobial effect for pathogens that cause BV
- a local effect and is not systemically absorbed
- Large market opportunity for both prevention of R-BV and BV
   Symptomatic Relief



## VivaGel® BV: Two attractive commercial opportunities

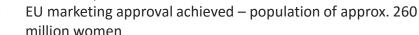


Not systemically absorbed

Selective antimicrobial effect

Good tolerability



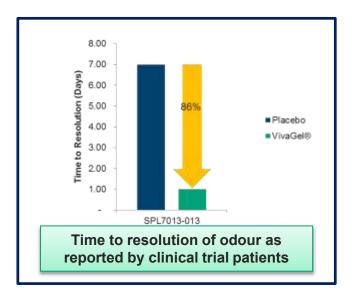


- Multiple partnering discussions well-advanced; 2016 launch expected; commercial manufacture underway
- Regulatory approval processes leveraging EU approval currently underway in multiple geographical regions
- Intended for treatment of BV, including rapid relief of BV symptoms
- Global market >U\$\$750 million
- Chronic use product
- Unmet need: no approved products
- Majority of BV sufferers experience recurrence
- Phase 3 programme in North America, Europe and Asia progressing well
- SPA agreement with FDA in place
- >2/3 recruited
- Partnering discussions ongoing, NDA planning underway
- Global market estimated at >US\$1 billion

Partner engagement underway for both opportunities

# VivaGel® BV Treatment & Symptomatic Relief of BV

- starpharma
- VivaGel® BV gains EU approval for the treatment and rapid relief of BV
- Allows for marketing in 28 EU countries & EFTA countries (population >260m women)
- EU approval will be used as the basis for obtaining marketing approvals for VivaGel® BV in other countries
- Discussions regarding marketing rights for VivaGel<sup>®</sup> BV underway with a number of potential commercial partners
- Current global market for the management of BV is estimated to be ~US\$750 million annually



VivaGel® BV is a unique topical vaginal gel. Its proprietary active is not absorbed and acts locally to suppress the pathogens that cause BV and the associated signs and symptoms.

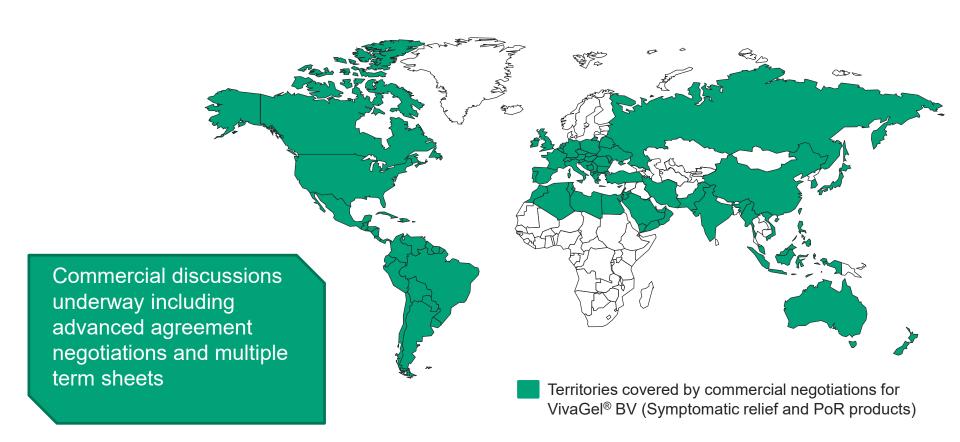
- "It was like gone almost overnight"
- "I would definitely use it again."
- "The next day I noticed a huge difference."
- "I will use it indefinitely..."

VivaGel® BV Trial Participants





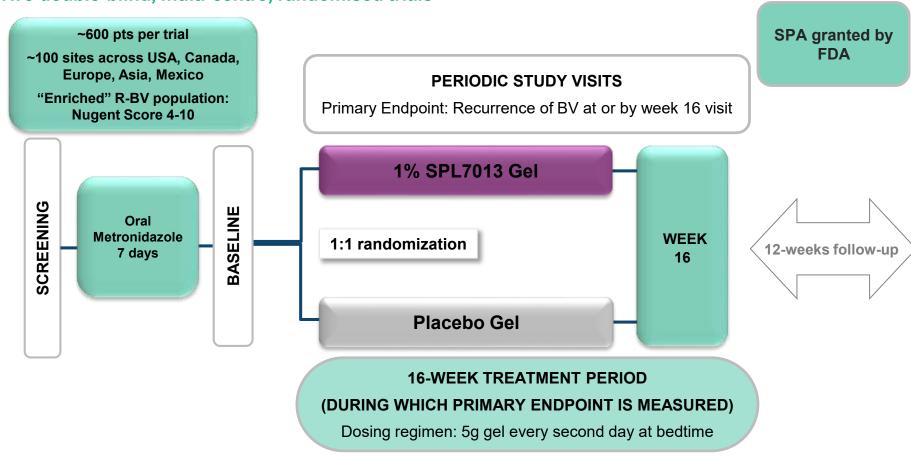
## **VivaGel® BV Commercial Discussions**





## **BV Prevention of Recurrence Phase 3 Program**

Two double-blind, multi-centre, randomised trials



SPA granted by FDA on trial design (EMA agreement also gained)
Phase 3 trials progressing well across Europe, Nth America & Asia

## VivaGel® Condom: A compelling, world-first product

- THE
  WORLD'S
  FIRST
  ANTI-VIRAL
  CONDOM
  - DUAL
    PROTECT

    Maseria and maserial and maser

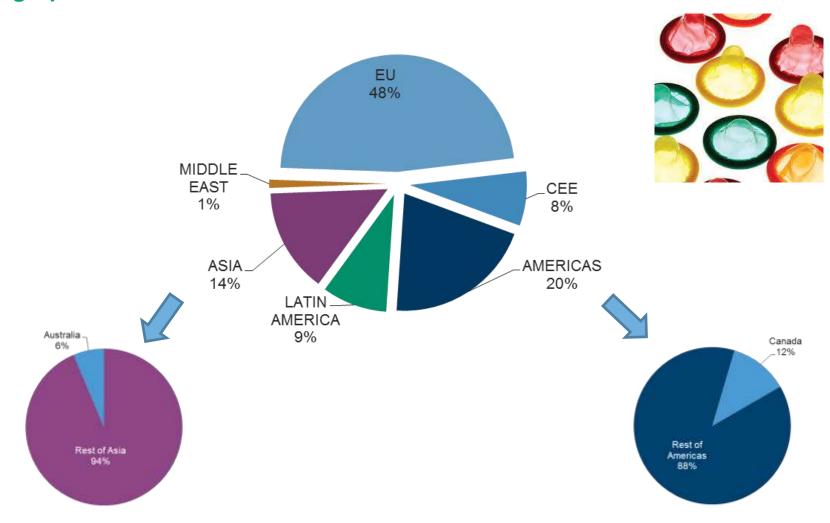
- Based on innovative, Australian technology
- Typical condom use associated with an estimated:
  - 80% reduction in HIV infection, only a 30% lower risk of genital herpes (HSV-2) infection, and a 70%
     reduced risk of a new HPV infection
- VivaGel® Condom: contains the potent antiviral VivaGel® shown in laboratory studies to inactivate up to 99.9% HIV, HPV & herpes - intended to help reduce risk of exposure to viruses via inactivation (as well as the STI barrier protection a condom provides)
- Licensed to global market leaders:
  - Ansell No. 2 globally based on sales; leading brand in regions including Australia
  - Okamoto No. 1 in Japan
  - Further commercial discussions underway including supply of VivaGel® condom to Chinese Government Market
- Currently selling in Australia in retail outlets and online under LifeStyles® Dual Protect™ brand
- Regulatory processes underway and significantly advanced in additional regions
- Branded global condom market: \$1.1B
- VivaGel<sup>®</sup> condom patents to 2027

DUAL
PROTECT™
with VivaGel®:
lubricated with
VivaGel® which
has been shown
to inactivate up
to 99.9% HIV,
HPV and HSV
(Herpes) in
laboratory
studies





## **Geographic Breakdown of Global Branded Condom Sales\***



<sup>\*</sup> Global Retail Audit Report – IMS, AC Nielsen, IRI

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### VivaGel® Condom – International Consumer Market Research<sup>^</sup>

International (USA, Europe, Asia, South America) consumer market research showed a very positive response and likelihood to purchase the VivaGel® condom:

- 85% found the concept very interesting/interesting; Confirms strong interest and purchase intent
- More than 80% described the condom as "new and different" and "offered benefits" when compared to what is currently available

Strong consumer interest across genders, ages and relationship status

Percentages shown are the 'top-2-box' scores	TOTAL	*	Ť	18-30 years	31-40 years	41-50 years
Level of interest	85%	88%	82%	87%	86%	82%

"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...."

VivaGel® Condom Consumer Research "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..."

VivaGel® Condom Consumer Research





## Starpharma's Priostar® Agrochemical Programs



## **Partnered Priostar® Programs**

- Multiple new agreements have been signed or extended with major agrochemical companies for the European, Asian and North American markets
- Collaboration with major Japanese agrochemical company
- License negotiations underway for rights to Priostar<sup>®</sup> to enhance a number of existing agrochemical products



- Multiple potential opportunities for revenue streams
- Estimated value of partners share of market for actives under development: >US\$5B

## **Internal Priostar® Programs**

 Regulatory compliant field trials of Priostar<sup>®</sup> enhanced versions of several major herbicide and fungicide formulations completed showing a number of commercially compelling benefits

Glyphosinate NH <sub>4</sub> (\$400m) Improve Efficacy  Metolachlor (\$605m) Improve efficacy  Deltamethrin (\$340m) Improve efficacy/ low solvent  Propiconazole (\$350m) Improve efficacy / Loading  Imidacloprid (>\$1B) Improve efficacy / Loading	Glyphosate	(\$4-5B)	Improve efficacy
Deltamethrin (\$340m) Improve efficacy/ low solvent Propiconazole (\$350m) Improve efficacy / Loading	Glyphosinate NI	H <sub>4</sub> (\$400m)	Improve Efficacy
Propiconazole (\$350m) Improve efficacy / Loading	Metolachlor	(\$605m)	Improve efficacy
	Deltamethrin	(\$340m)	Improve efficacy/ low solvent
Imidacloprid (>\$1B) Improve efficacy / Loading	Propiconazole	(\$350m)	Improve efficacy / Loading
	Imidacloprid	(>\$1B)	Improve efficacy / Loading

Priostar® benefits for innovative crop protection formulations

#### Better in the can:

- Solubility enhancement
- Increased loading
- Formulation stability
- Reduction/removal of solvents – "greener" formulations

#### Better in the field:

- Increased efficacy
- Modification of soil penetration
- Protection of Actives

## Priostar® Dendrimer **Glyphosate Formulation Field Trial data**

## Glyphosate 450 (Commercial)

Priostar® glyphosate formulations have demonstrated a number of key benefits in field trials:

- **Better overall** effectiveness
- Early feedback of effectiveness to grower
- More effective in a number of hard-to-kill weeds than comparable marketed glyphosate product

**Glyphosate 450** (with Priostar® Dendrimer)

540g/ha





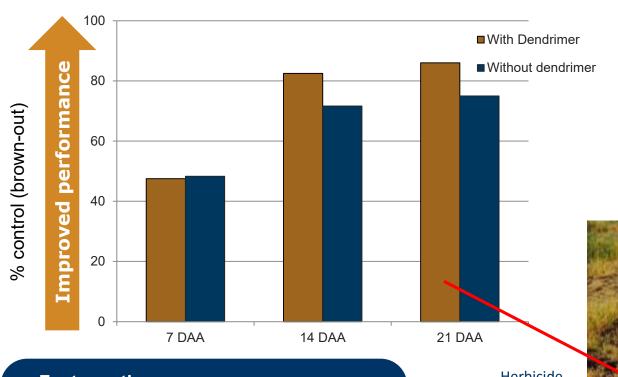








## Priostar® enhanced herbicide performance



- Faster action
- Better efficacy (1.7l/ha)
- Undisclosed leading herbicide sales
   ~\$400m (active subject of patent filings)

Herbicide With Dendrimer



## **Starpharma Holdings – Key Financials (A\$)**

Key Financial Data (Financial Year to 30 June)	FY 2015 AU\$M	FY 2014 AU\$M
Total revenue and income	1.7	1.3
R&D Tax Incentive	3.4	4.2
Net loss after tax	(19.0)	(14.6)
Cash outflow from operations	(13.6)	(9.8)
Cash at 30 September 2015	\$26.	.1M*

<sup>\*</sup>Excludes US\$2M AZ Signature Payment & AU\$3.4M R&D Tax incentive



### **Expected News Flow**

#### VivaGel® Portfolio:

- Further regulatory approvals for VivaGel® BV Symptomatic Relief product
- Commercial agreements for VivaGel® BV Symptomatic Relief product marketing (multiple territories)
- Launch VivaGel® BV Symptomatic Relief
- Progress and completion of VivaGel® BV Phase 3 BV Prevention of Recurrence trials
- Further approvals/geographic roll-out of the VivaGel® condom

#### **DEP™ Drug Delivery:**

- Completion of DEP™ docetaxel Phase 1 clinical trial and advance to Phase 2
- Partnered program announcements (further compounds advanced) and new DEP™ deals
- Advance additional DEP™ candidates through preclinical and into clinic

#### **Priostar® Dendrimers in Agrochemicals:**

- Partnered program announcements Licences from existing and new deals
- Advance internal candidates eg. glyphosate (Roundup®) including regulatory-compliant field trials
- Pre-registration activities to support commercialisation



#### For Further Information

Dr Jackie Fairley, CEO +61 3 8532 2704

Investor.relations@starpharma.com

Twitter: @Starpharma\_ASX



## **VivaGel®**

## **Drug Delivery**







