



**Australian Emerging  
Companies Conference -  
Healthcare & Biotech**

**Starpharma Holdings ASX:SPL**

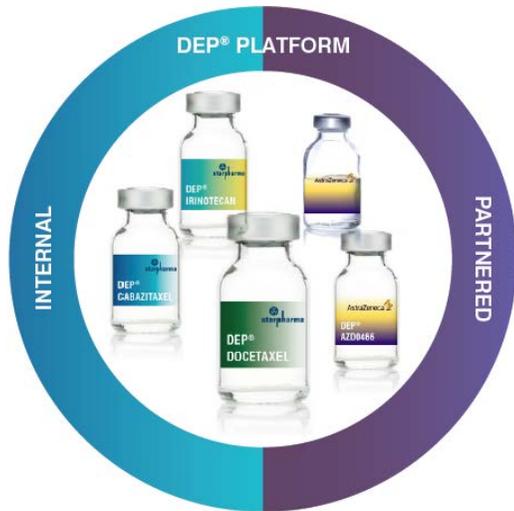
**Dr Jackie Fairley, CEO  
29 May 2019**

# Important notice and disclaimer

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.

*FLEURSTAT BVGEL (VivaGel® BV) for the treatment of BV and relief of symptoms*

Ask your pharmacist – they must decide if this product is right for you. Always read the label. Follow the directions for use. Do not use for more than 7 days unless a doctor has told you to. See your doctor if symptoms persist after 7 days or recur within 2 weeks, and if you consider you may be at risk of an STI. See a doctor if you are diabetic or pregnant/breastfeeding (or plan to be).



- 1 Overview
- 2 VivaGel® Portfolio
- 3 DEP® Portfolio
- 4 Outlook



# Starpharma Holdings (ASX:SPL)

## Investment Highlights



### Deep portfolio of high-value products based on novel polymer platform

- Melbourne-based ASX300 company, Market cap ~\$470M
- Unique polymer (dendrimer) platform creating patented high value healthcare products (>100 patents)
- Deep portfolio of products, including late stage/on-market, in high value markets:
  - VivaGel® BV – Licensed in >160 countries, on-market in Australia, European launch planned in May/June 2019
  - VivaGel® condom – Launched in Australia and Canada, Japanese launch expected mid-2019
  - DEP® is a valuable proprietary nanoparticle drug delivery platform creating significant optionality, accelerates path to market and manages investment risk. Potentially applicable to >70% of the top 200 pharmaceuticals
- Successful partnerships with global companies including AstraZeneca, Mundipharma, ITF, Aspen and others.
- Well funded, with A\$44.7M cash (31 March 2019)



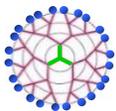
Starpharma is an ASX300 company with **a proven record of development & commercialisation** including successful partnerships with leading global companies



# Starpharma's proprietary platform has enabled it to develop a deep portfolio of high-value healthcare products

## VIVAGEL® PORTFOLIO

VivaGel® BV



SPL7013



TGA APPROVED

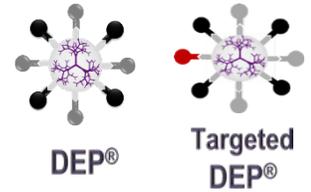


VivaGel® Condom



## DEP® DRUG DELIVERY PORTFOLIO

DEP® Internal Products



Starpharma's proprietary dendrimer platform

DEP® Partnered Products



AstraZeneca



MULTIPLE HIGH-VALUE COMMERCIAL OPPORTUNITIES UNDERPINNED BY 100+ PATENTS

# Starpharma's pipeline

	Product	Indication	Preclinical	Clinical/Regulatory	Commercial
VIVAGEL®	VIVAGEL® BV	Bacterial Vaginosis			
	VIVAGEL® CONDOM	Anti-viral condom			
	SPL7013 OPHTHALMIC	Viral conjunctivitis			
INTERNAL DEP®	DEP® DOCETAXEL	Oncology			 Licence after proof-of-concept
	DEP® CABAZITAXEL	Oncology			
	DEP® IRINOTECAN	Oncology			
	OTHER DEP®	Oncology			
	TARGETED DEP®	Oncology			
PARTNERED DEP®	AZ DEP® AZD0466	Oncology			
	AZ #2 DEP® CANDIDATE	Oncology			
	AZ #3 DEP® CANDIDATE	Undisclosed			
	ANTIBODY DRUG CONJUGATE (ADC) #1	Oncology			Undisclosed Partner
	ANTIBODY DRUG CONJUGATE (ADC) #2	Oncology			Undisclosed Partner



# Starpharma's proprietary platform yields multiple potential revenue streams & valuable partnering opportunities

PARTNERED LATE-STAGE PRODUCTS



VivaGel® BV licensed in >160 countries



PARTNERED LATE-STAGE PRODUCTS



VivaGel® condom licensed broadly and launched in Australia and Canada (& Japan mid-year)

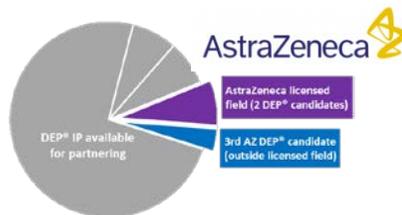


LICENSING DISCUSSIONS FOLLOWING PROOF-OF-CONCEPT



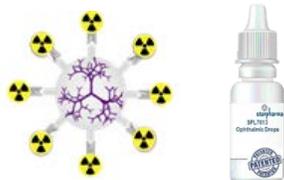
Multiple DEP® drugs in development creating numerous licensing opportunities

PARTNERED DEP® PROGRAMS APPLICABLE TO MULTIPLE NEW OR EXISTING DRUGS



DEP® licenses with AstraZeneca & other leading international pharmaceutical companies to apply DEP® to improve their new or existing drugs

LICENSING & CO-DEVELOPMENT OPPORTUNITIES



DEP® Radiopharmaceuticals & SPL703 ophthalmic drops for adenoviral conjunctivitis

# Starpharma is in a strong financial position

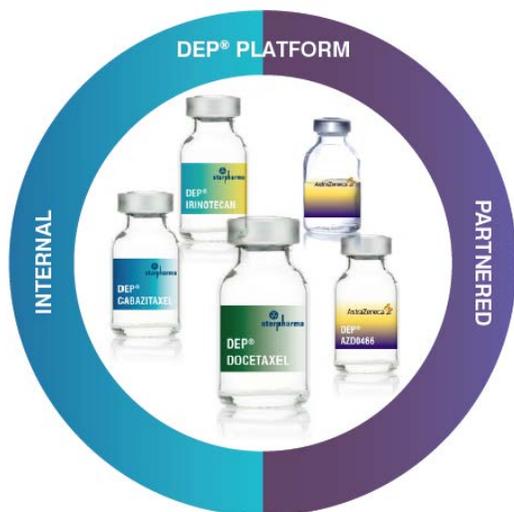
Key Financial Data	1H FY2019 A\$M	1H FY2018 A\$M	FY 2018 A\$M	FY 2017 A\$M
Total revenue and income	0.7	1.2	5.0*	3.6
<b>Loss from continuing operations</b>	<b>(7.3)</b>	<b>(6.2)</b>	<b>(10.3)</b>	<b>(15.2)</b>
Profit/(loss) from discontinued operation	-	-	-	23.4
Profit/(loss) for the period	(7.3)	(6.2)	(10.3)	8.2
<b>Net operating cash outflows</b>	<b>(7.3)</b>	<b>(11.3)</b>	<b>(10.2)</b>	<b>(17.0)</b>
<b>Net cash burn<sup>1</sup></b>	<b>(6.9)</b>	<b>(11.3)</b>	<b>(9.9)</b>	<b>(18.0)<sup>2</sup></b>
<b>Closing Cash (31 Dec / 30 June)</b>	<b>44.4<sup>^</sup></b>	<b>49.9</b>	<b>51.3</b>	<b>61.2</b>

] Sale of Agrochemicals Business in FY17

**<sup>^</sup> Closing cash at 31 March 2019 A\$44.7M**

- Historically, 2H net cash burn is lower than 1H
- VivaGel<sup>®</sup> BV product launches scheduled for 2H FY2019, with associated milestone and product sales to follow

\*Mundipharma VivaGel<sup>®</sup> BV signing milestones, majority recognised in FY2018



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# VivaGel® portfolio - innovative, late-stage global products



## VivaGel® BV

A breakthrough product for the management of BV



Available in Australian pharmacies; Marketed by Aspen Pharmacare as Fleurstat BVgel



Mundipharma  
European launch expected in May/June; International roll-out to follow



- Licensed to ITF Pharma for the US; Mundipharma for Europe, Russia, CIS, Asia, the Middle East, Africa & Latin America; and to Aspen for Australia/New Zealand
- Regulatory submissions made in a number of countries, including the US (Fast Track designation); FDA meeting/ongoing dialogue to determine confirmatory data required prior to approval of VivaGel® BV in the US

## VivaGel® condom World's first & only anti-viral condom

- Launched in Australia & Canada; Approved in Japan - launch expected mid-year
- Licensed to Lifestyles; Okamoto (Japan); Sky & Land (China); & Koushan



# VivaGel® BV Global Commercialisation Strategy



- ✓ VivaGel® BV has been licensed in over 160 countries
- ✓ Global market estimated to be >US\$750M p.a. for BV treatment & >US\$1B p.a. for BV prevention
- ✓ Available in Australian pharmacies, European launch expected in May/June 2019
- ✓ Additional regulatory processes underway for the US & further Mundipharma regions

VivaGel® BV Partners	Territory	Deal terms	Starpharma supplies product from CMOs
	Europe	Attractive revenue share + up to US\$15.5M in milestones	✓
	RoW	Attractive revenue share + up to US\$9.2M in milestones	✓
	Aus/NZ	Royalties on net sales	✓
	US	Escalating double-digit royalties + up to US\$101M in milestones	✓ ITF also have manufacturing rights
	India, Canada & Israel currently under negotiation		

# Bacterial Vaginosis (BV) is the most common vaginal infection worldwide - an area of significant unmet need and a large market opportunity



**NEW BREAKTHROUGH  
NON-ANTIBIOTIC  
TREATMENT**



**Large market opportunity**

**BV Treatment: US\$750M (est)**

**Prevention of recurrent BV: US\$1B (est)**

**Management of BV is an area of significant unmet need:**

- Untreated, BV is associated with miscarriage, infertility & PID as well as having a significant impact on quality of life

**Current therapies are inadequate and do not stop BV recurring:**

- Current BV treatment is typically with antibiotics (eg. Metronidazole)
- Antibiotic resistance is a problem and antibiotics have unpleasant side effects and other issues that limit usage
- No currently approved therapies for prevention of rBV
- Independent market research indicates a high level of interest in a non-antibiotic BV therapy

# Australian launch of Fleurstat BVgel is the first launch globally for VivaGel® BV

## Fleurstat BVgel is the only OTC product for BV available in Australian pharmacies



Above: Images above supplied by Channel 9 News

Guardian

priceline pharmacy

Amcal+

TerryWhite Chemmart

- Fleurstat BVgel is available from Australian pharmacies
- Starpharma receives royalties on sales of Fleurstat BVgel
- Aspen is responsible for marketing including:
  - Professional salesforce detailing
  - Significant healthcare professional & consumer outreach
  - Advertising via various platforms, dedicated website, digital marketing activities

starpharma



Above: Examples of Aspen's marketing materials, and Fleurstat BVgel as featured on the front cover of the May 2019 Australian Journal of Pharmacy

# VivaGel® BV - a breakthrough product for BV, the most common vaginal infection worldwide and twice as common as “thrush”



VivaGel® BV is a patented, non-antibiotic, rapidly acting gel with a novel mechanism of action



# Independent market research feedback for VivaGel® BV has been very positive

US physicians estimate >70% of BV patients are interested in a non-antibiotic BV therapy

*"I would love to try it [VivaGel® BV] because it is **not an antibiotic.**"*



-US GYN #1

*"It [VivaGel® BV] is certainly simple enough and **the side effect profile is minimal**"*



-US GYN #6

*"I think part of the reason why we are seeing **more recurrence** is that there has got to be some kind of **resistance being built up to the antibiotics.**"*



-US GYN #5



*"The good news is **not having an antibiotic** hanging around the environment **is good.** The more antibiotics you have out there, the more potential for resistance."*



-US Payer #3

*"I like the molecule [VivaGel® BV] ... there's nothing really that treats the recurrent patient."*



-US Payer #2

*"It seems like it [VivaGel® BV] would **replace current [off label] prophylactic regimens** that I recommend."*



-US NP #1

*"The biggest unmet need is to be able to prescribe a treatment that has **minimal side effects**, does not interfere with the patient's lifestyle and **resolves symptoms quickly.**"*



-US PCP #1

# VivaGel® condom approved in Japan – launch planned mid-year

**Okamoto Industries has total revenues of >US\$1.1B and is Japan's leading marketer of condoms with a majority share of the Japanese condom market**

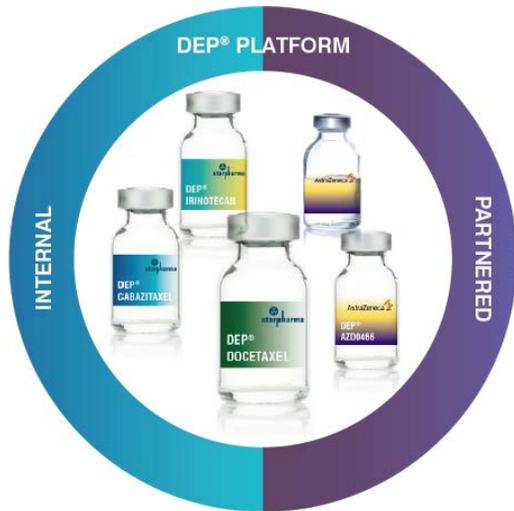
- VivaGel® condom received final regulatory approval in January 2019 allowing sale in Japan by Okamoto, Japan's leading marketer of condoms
- Okamoto are progressing well with their launch plans for the VivaGel® condom in Japan, which is expected mid-year; first receipts received from Okamoto in April
- Starpharma supplies VivaGel® active and also receives royalty payments under its licence with Okamoto



“We are very pleased to be in a partnership with Starpharma for this innovative product and excited about its upcoming launch.”

Mr. Keiji Ikeda, Okamoto's senior managing director





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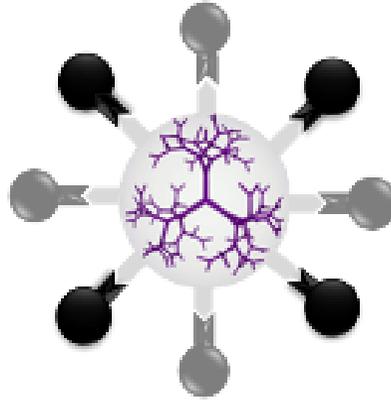


# Starpharma's DEP<sup>®</sup> drug delivery platform enhances the commercial and therapeutic value of many drugs with particular application in oncology



## Improved

**efficacy<sup>1</sup>:** DEP<sup>®</sup> improves anti-cancer efficacy through better drug targeting & improved pharmacokinetics.



## Reduced

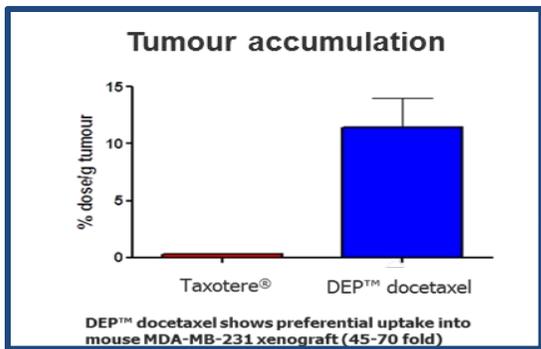
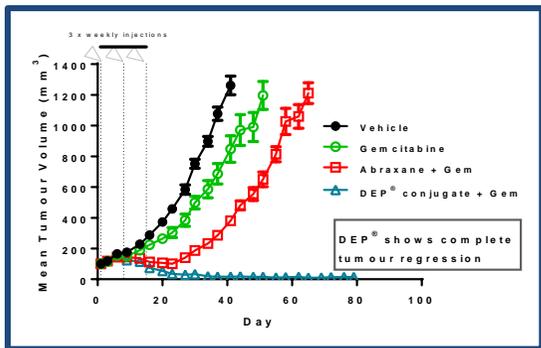
**side-effects<sup>1</sup>:** DEP<sup>®</sup> reduces important side effects such as bone marrow toxicity / low white blood cells (neutropenia) and alopecia (hair loss). DEP<sup>®</sup> removes need for toxic detergents in current formulations.



**Patent life:** In addition to the therapeutic and clinical benefits, DEP<sup>®</sup> also provides valuable commercial benefits by creating new intellectual property and extending patent life.

DEP<sup>®</sup> is potentially applicable to >70% of the top 200 pharmaceuticals (by sales)

# Starpharma's DEP<sup>®</sup> platform enhances the commercial and therapeutic value of a wide range of drugs



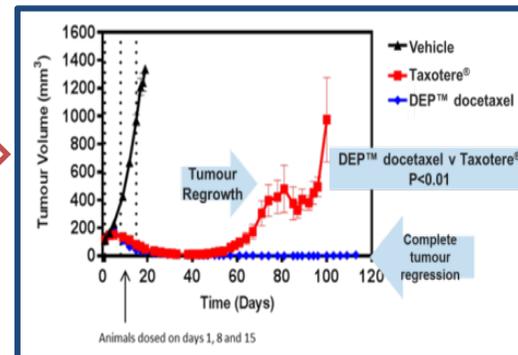
Docetaxel

DEP<sup>®</sup> docetaxel

## DEP<sup>®</sup> BENEFITS

### Improved Efficacy

Reproducible results with many candidates & tumour types

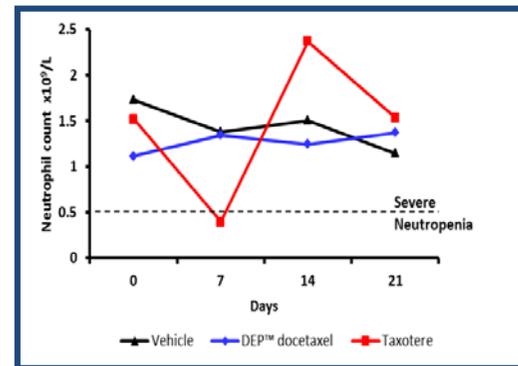


### Benefit in Combination

Enhanced efficacy as monotherapy or in combination approaches

### Improved Safety

Reduced neutropenia/BM toxicities

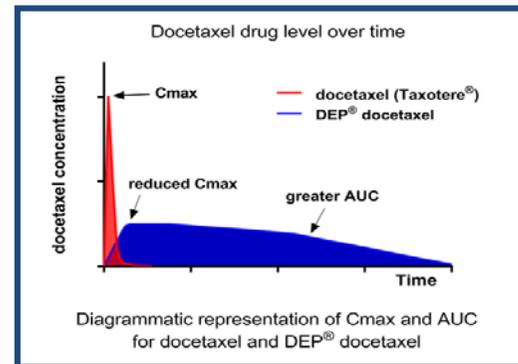


### Targeting Tumour Tissue

45-70 x more drug in tumour v original drug

### Improved PK and Half-Life

Longer half life and lower C<sub>max</sub>



### Improved Solubility

Detergent Free Formulations for improved safety – 20,000 x solubility increase

DEP<sup>®</sup> has demonstrated numerous reproducible benefits across multiple drugs

# DEP<sup>®</sup> platform has enabled Starpharma to build a deep pipeline of high-value internal products



DEP<sup>®</sup> docetaxel:  
Starpharma's most advanced DEP<sup>®</sup> product - a detergent-free, enhanced version of widely used anti-cancer drug Taxotere<sup>®</sup>

- ✓ Improved Efficacy
- ✓ Benefit in combination with marketed anti-cancer therapies
- ✓ Improved Safety
- ✓ Improved Survival
- ✓ Patent Life Extension
- ✓ Detergent Free



DEP<sup>®</sup> cabazitaxel:  
Detergent-free, enhanced version of leading prostate cancer drug Jevtana<sup>®</sup>

- ✓ Improved Efficacy
- ✓ Benefit in combination with marketed anti-cancer therapies
- ✓ Improved Safety
- ✓ Improved Survival
- ✓ Patent Life Extension
- ✓ Detergent Free



DEP<sup>®</sup> irinotecan:  
Enhanced version of leading anti-cancer drug Camptosar<sup>®</sup>

- ✓ Improved Efficacy
- ✓ Benefit in combination with marketed anti-cancer therapies
- ✓ Improved Safety
- ✓ Improved Survival
- ✓ Patent Life Extension



Further DEP<sup>®</sup> candidates under development

# AstraZeneca's DEP® programs illustrate the potential returns from DEP® partnered programs



## Partnered-DEP®



Starpharma develops DEP® candidates under funded research collaborations



Partner selects candidate – either **novel or existing drug** (for life-cycle management)



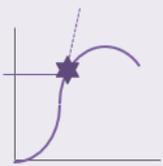
Partner funds development – creates a free carried interest for Starpharma



Starpharma is eligible to receive significant milestone payments & royalties on products

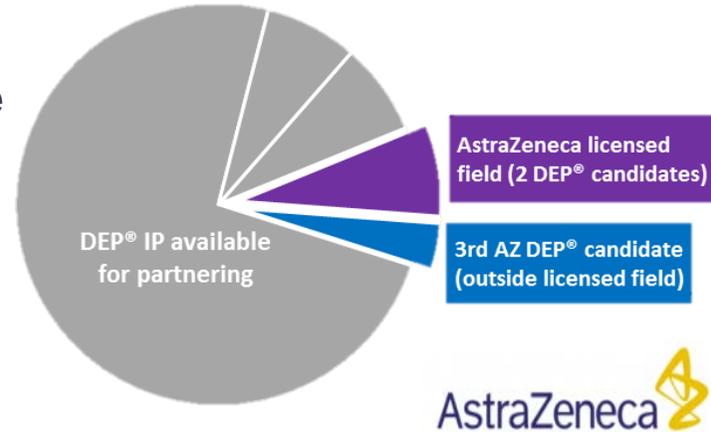


Licences are structured to allow for multiple partnered-DEP® programs to run in parallel



When DEP® is used for life-cycle management, it allows partners to achieve continued sales growth through differentiated product benefits & new IP

## AstraZeneca has three active DEP® programs



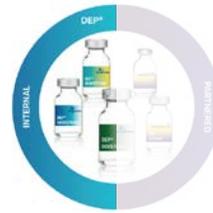
## AstraZeneca's multiproduct DEP® licence

- First DEP® candidate, AZD0466: Starpharma's total receipts (milestones + royalties) now estimated to be up to A\$2.4B based on increased annual sales projections
- Subsequent DEP® candidates US\$93M in milestones + tiered royalties
- AstraZeneca funds all development & commercialisation costs

*"This licence 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

# DEP<sup>®</sup> docetaxel is an enhanced version of widely used cancer drug, Taxotere<sup>®</sup>



Enhanced version of docetaxel (Taxotere<sup>®</sup>) - one of the most widely used cancer drugs for a range of tumours including breast, lung and prostate



Docetaxel (Taxotere<sup>®</sup>) is a blockbuster cancer drug with peak global sales >US\$3.1B despite having multiple US FDA “Black Box” warnings



DEP<sup>®</sup> patents provide coverage to 2032



## Advantages of DEP<sup>®</sup> docetaxel

- ✓ Reduction in major dose-limiting side effect (neutropenia)
- ✓ Detergent-free formulation (less toxic)
- ✓ Tumour-targeting (~70x more)
- ✓ Improved pharmacokinetics
- ✓ Improved efficacy

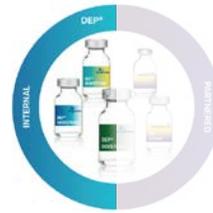
vs



## POSITIVE PHASE 1 RESULTS:

- No steroid pre-treatment required due to DEP<sup>®</sup> docetaxel’s detergent-free formulation - unlike Taxotere<sup>®</sup>
- No neutropenia (compares to >>90% with Taxotere<sup>®</sup>)
- No protocol-defined Dose Limiting Toxicities and no reports of other problematic adverse events observed with docetaxel treatment, including anaphylaxis, fluid retention, diarrhoea and nail disorders
- Only one patient (1/27) with mild alopecia/hair loss – compared to ~75% with Taxotere<sup>®</sup>
- Encouraging efficacy signals in 13/27 DEP<sup>®</sup> docetaxel patients including:
  - Stable disease (SD) in multiple patients with lung, pancreatic (SD>20 weeks), gastro-oesophageal (SD >18 weeks), glioblastoma (brain) and renal cancers

# DEP<sup>®</sup> docetaxel phase 2 program underway



## PHASE 2

(currently recruiting)

Multi-site trial – 4 sites currently recruiting (Guy's Hospital London, UCLH, Newcastle, Leeds)

1. Open-label, two-stage design to allow for exploration of efficacy of DEP<sup>®</sup> docetaxel as a **monotherapy**

2. In parallel, **combination** of DEP<sup>®</sup> docetaxel & nintedanib (Vargatef<sup>®</sup>) in lung cancer

## Positive interim results:

### Monotherapy arm

- Trial results continue to show encouraging efficacy signals (stable disease & tumour shrinkage); >70% of initial cohort recruited.
- Notable lack of bone marrow toxicity (e.g. neutropenia) and other common side effects including hair-loss, anaphylaxis and oedema.
- Based on investigator interest and activity observed, other tumour types including pancreatic also being explored.

### Combination arm

- Encouraging efficacy signals observed include stable disease & tumour shrinkage.
- Recruitment continues to progress well.
- Based on positive interim results in the DEP<sup>®</sup> docetaxel + nintedanib combination arm (no protocol-defined DLTs, efficacy signals, lack of bone marrow toxicity), recruitment has been expanded.

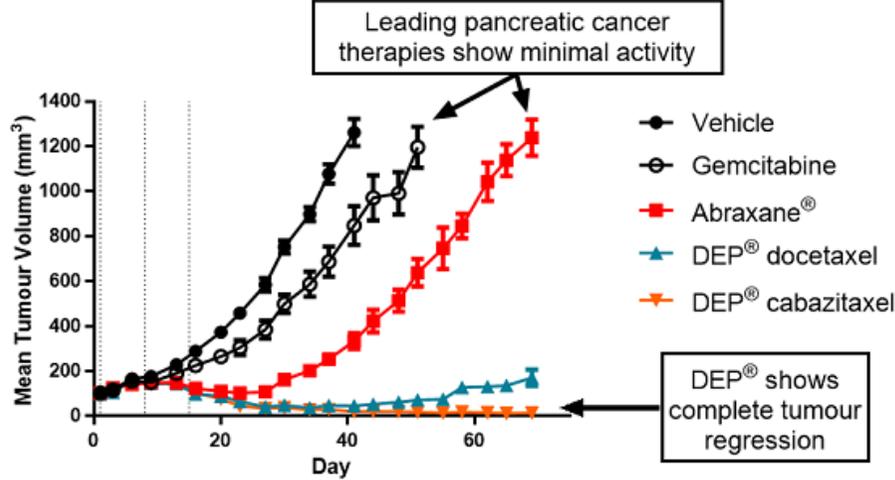
## Commercial Objective:

- Create value through clinical proof-of-concept in one or more cancer types – alone and/or in combination
- License following proof-of-concept clinical data; platform validation
- Utilise accelerated development pathways for optimal ROI

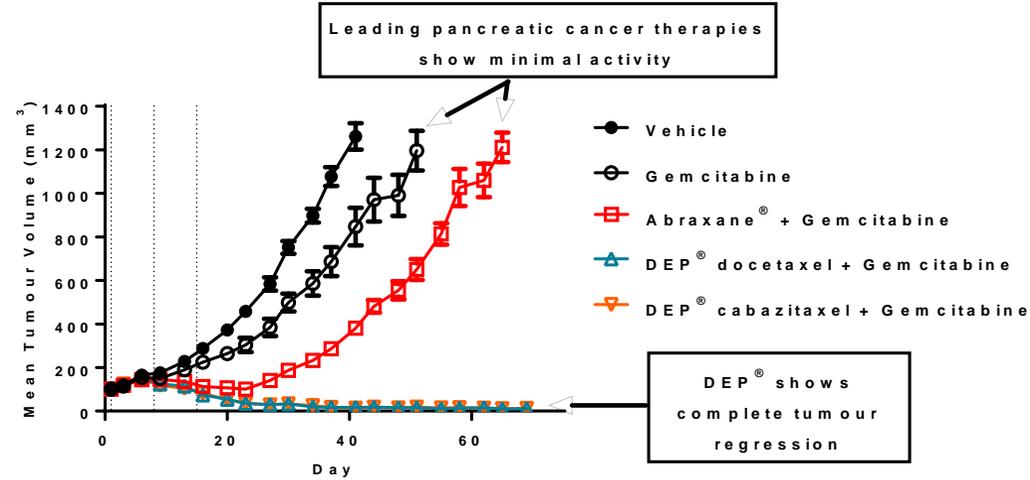
# DEP<sup>®</sup> docetaxel & DEP<sup>®</sup> cabazitaxel outperformed both gemcitabine & Abraxane<sup>®</sup> in human pancreatic cancer model



## Monotherapy



## Combination Therapy



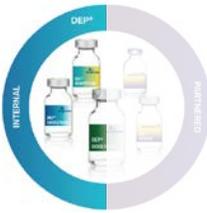
In a human pancreatic cancer model:

- ✓ DEP<sup>®</sup> cabazitaxel, both alone and in combination with gemcitabine, showed complete tumour regression and 100% survival
- ✓ DEP<sup>®</sup> docetaxel, alone, and in combination with gemcitabine, significantly outperformed gemcitabine and/or Abraxane<sup>®</sup> and showed 100% survival
- ✓ These findings feed into the clinical development programs for DEP<sup>®</sup> docetaxel and DEP<sup>®</sup> cabazitaxel



- Pancreatic cancer is a leading cause of cancer death, with a 1-yr survival rate of 20%, and a 5-yr survival rate of only 7%
- Gemcitabine (peak sales US\$1.7B) is frequently used alone and in combination with Abraxane<sup>®</sup> (2017 sales US\$1.2B) in pancreatic cancer as a first line drug treatment

# DEP<sup>®</sup> cabazitaxel is an enhanced version of leading prostate cancer drug, Jevtana<sup>®</sup>



Starpharma's patented DEP<sup>®</sup> cabazitaxel is an enhanced version of cabazitaxel (Jevtana<sup>®</sup>) – primarily used for prostate cancer and in clinical development for other cancers including breast and bladder



Cabazitaxel (Jevtana<sup>®</sup>) – estimated global sales of US\$500M for 2018 despite having multiple US FDA “Black Box” warnings (for neutropenia & anaphylaxis – due to polysorbate 80 in formulation)



DEP<sup>®</sup> cabazitaxel patents and applications provide coverage to 2039



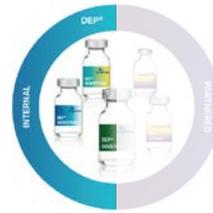
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## Advantages of DEP<sup>®</sup> cabazitaxel

- ✓ DEP<sup>®</sup> cabazitaxel significantly outperformed Jevtana<sup>®</sup> (cabazitaxel) in a human breast cancer model with respect to efficacy, safety and survival
- ✓ Detergent (polysorbate 80) free formulation
- ✓ Reduction of major dose-limiting side effect (neutropenia)

# DEP<sup>®</sup> cabazitaxel phase 1 / 2 trial program underway



## PHASE 1 / 2 (currently recruiting)

Multi-site trial –  
(more sites to be added in  
the expansion phase)

Planning to recruit up to 35  
patients with solid tumours

As the trial progresses,  
decisions will be made as to  
which tumour types to focus  
on and any additional  
patients will be recruited to  
explore efficacy in specific  
tumour types

## Positive interim results:

### Phase 1: Open-label dose-escalation

- Dose escalation and recruitment continues
- Several patients have now been dosed with multiple cycles of DEP<sup>®</sup> cabazitaxel
- No dose-limiting toxicities (DLTs) or other significant toxicities associated with DEP<sup>®</sup> cabazitaxel have been observed
- Efficacy signals have been observed:
  - in multiple patients - prostate and other tumour types, and
  - at doses several fold lower than usually prescribed for cabazitaxel (due to the dose-escalation phase)

Adaptive phase 1 / 2 trial design enables seamless transition from phase 1 to phase 2, to explore efficacy as early as possible

### Phase 2: Dose expansion to establish efficacy



## Commercial Objective:

- Create value through clinical proof-of-concept in one or more cancer types – alone and/or in combination
  - Potential to commercialise earlier than phase 2
- OR
- Utilise accelerated development pathways for optimal ROI

# DEP<sup>®</sup> irinotecan: an enhanced version of widely used anti-cancer drug irinotecan (Camptosar<sup>®</sup>)



Irinotecan is a successful oncology agent – **Camptosar<sup>®</sup> peak sales US\$1.1B; Predominantly used for colon cancer**, also in combination for pancreatic, lung, ovarian, gastric & cervical cancer



Irinotecan has many significant issues including **black box warnings** for diarrhoea & myelosuppression



Irinotecan is a prodrug that must be converted to its active form, SN-38, to be effective and **displays wide patient-to-patient variability**



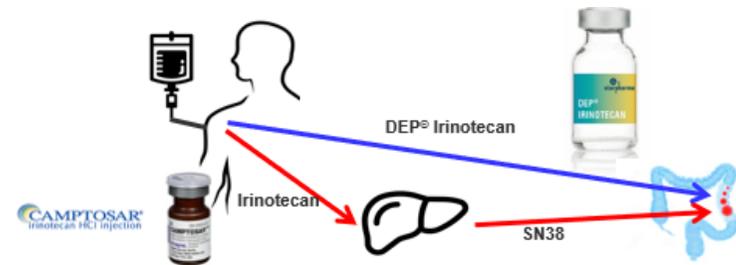
Irinotecan is increasingly being used in **combination with other anti-cancer drugs** with greater benefits

## DEP<sup>®</sup> irinotecan phase 1 / 2 trial

- **Expected to commence mid-year**
- **CRO appointed, sites selected, ethics and regulatory submissions are well advanced & finalising trial documents**



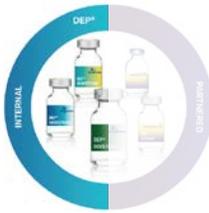
**DEP<sup>®</sup> irinotecan incorporates the irinotecan active moiety (SN-38)** and is an improved version of **Camptosar<sup>®</sup>** with improved efficacy, safety and tolerability demonstrated in multiple pre-clinical studies



DEP<sup>®</sup> drug delivery provides:

- the ability to solubilise the active metabolite SN38 directly thereby removing the need for liver metabolism
- protection of the active SN38 along with slow controlled release SN38
- targeting directly into solid tumours
- Improved efficacy and survival benefit (preclinical)

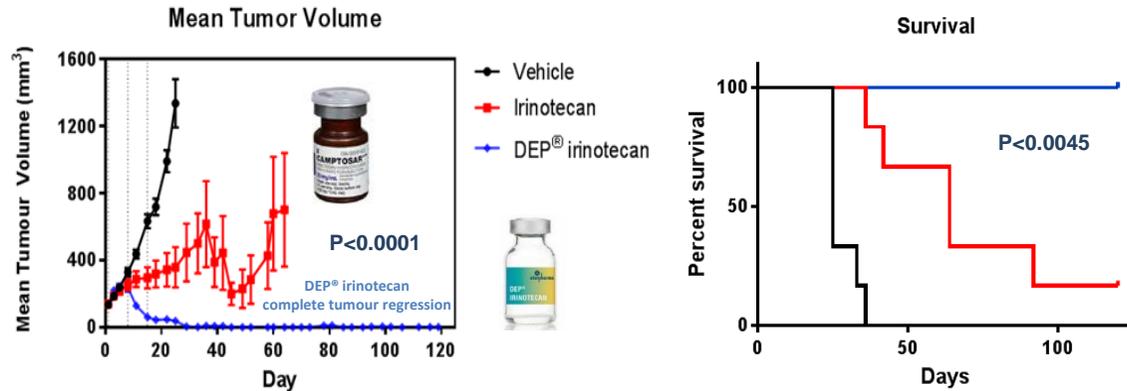
# DEP<sup>®</sup> irinotecan outperformed standard irinotecan (Camptosar<sup>®</sup>) in human colon and pancreatic cancer models



## Colon cancer:

- DEP<sup>®</sup> irinotecan demonstrated significantly better anti-tumour activity and increased survival compared with irinotecan (Camptosar<sup>®</sup>) in *multiple* human colon cancer models.

### SW620 (human colon cancer) Xenograft

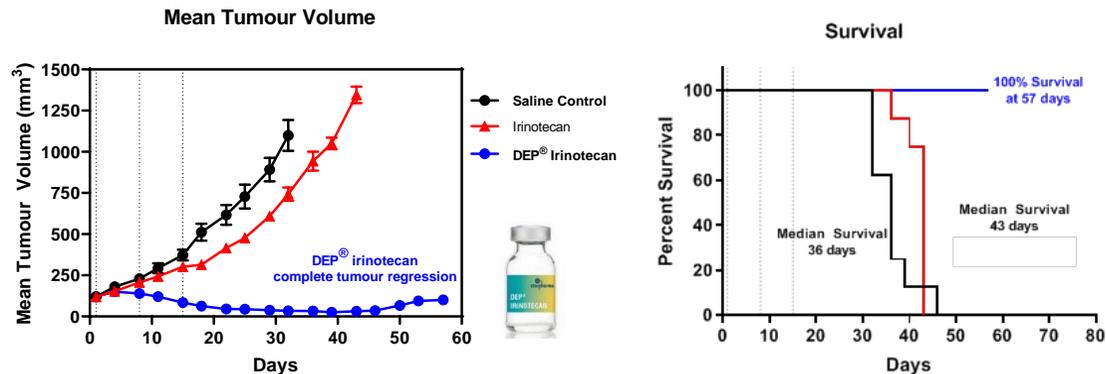


SW620 (colon cancer) mouse xenograft Balb/c nude mice (n=6 /group). IV dosing with Vehicle, DEP<sup>®</sup> irinotecan or irinotecan on days 1, 8 and 15.

## Pancreatic cancer:

- DEP<sup>®</sup> irinotecan showed **complete tumour regression** and
- DEP<sup>®</sup> irinotecan showed **100% survival** in a human pancreatic cancer model

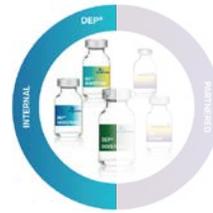
### CAPAN-1 (human pancreatic cancer) Xenograft



CAPAN-1 (human pancreatic cancer) xenograft in mice (n=8 /group). IV dosing with Vehicle, DEP<sup>®</sup> irinotecan, irinotecan or irinotecan + 5-FU on days 1, 8 and 15

**Kaplan Meier Survival Curve**  
DEP<sup>®</sup> irinotecan versus all other groups (P<0.0001 Log-rank Mantel Cox)

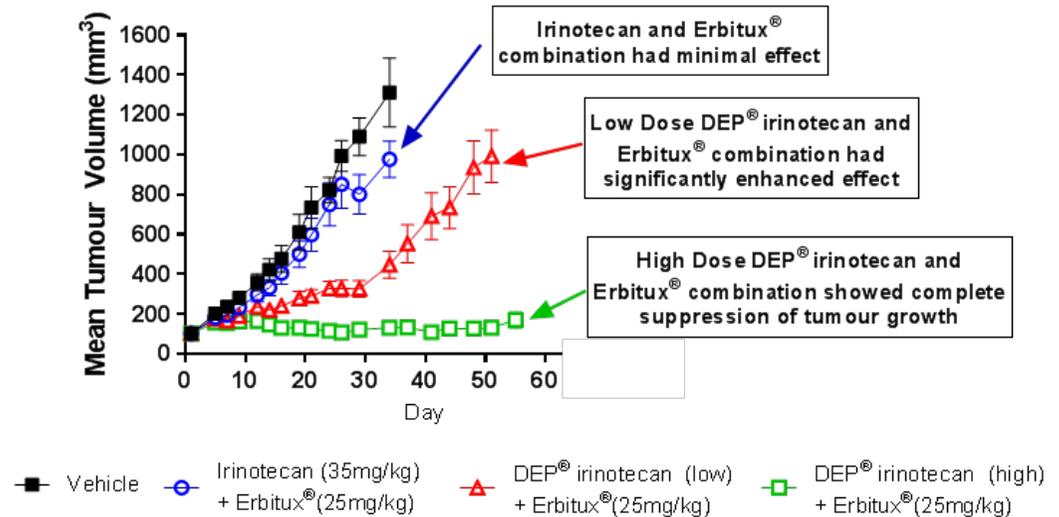
# DEP<sup>®</sup> irinotecan outperforms in refractory human colon cancer model



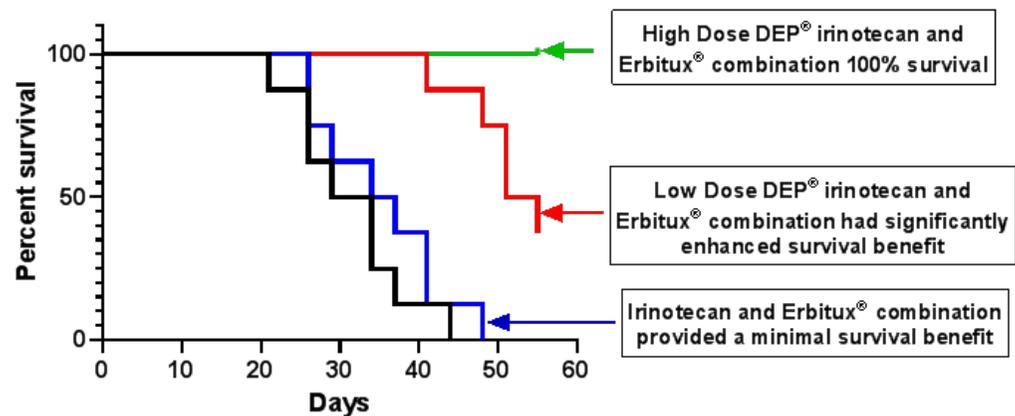
## Irinotecan-refractory human colon cancer model (HT-29 xenograft)

- DEP<sup>®</sup> irinotecan in combination with Erbitux<sup>®</sup> demonstrated **significantly enhanced anti-cancer efficacy, and survival** versus standard irinotecan and Erbitux<sup>®</sup>
- DEP<sup>®</sup> irinotecan (high dose) in combination with Erbitux<sup>®</sup> showed **complete suppression of tumour growth and 100% survival**

Mean Tumour Volume

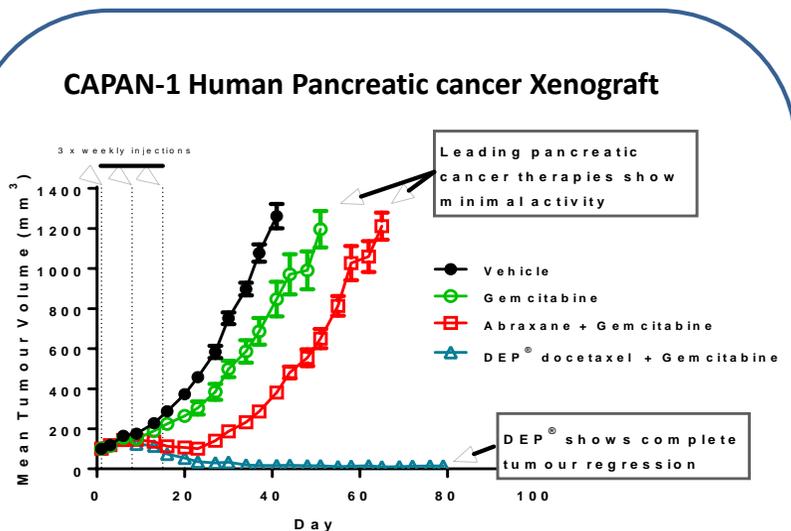


Survival



# DEP<sup>®</sup> drugs are ideal candidates for combination therapy due to an enhanced safety profile

Combination therapies are widely regarded as the future of oncology. Starpharma continues to add value to its DEP<sup>®</sup> portfolio through exploring DEP<sup>®</sup> products in combination with other oncology agents.

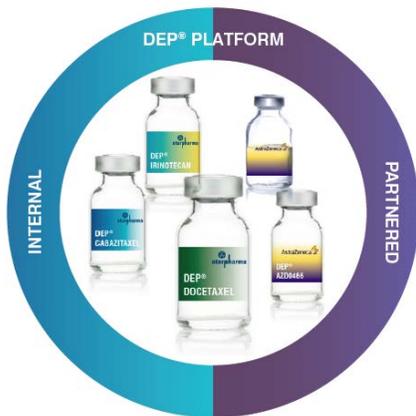


DEP<sup>®</sup> docetaxel and DEP<sup>®</sup> cabazitaxel (data not shown) both recently showed significant efficacy and safety benefits over gemcitabine (Gemzar<sup>®</sup>) alone, Abraxane<sup>®</sup> (Nab-paclitaxel) alone and in combination, in a human pancreatic cancer model.

## DEP<sup>®</sup> THERAPEUTICS IN COMBINATION WITH IMMUNOONCOLOGY (IO) AGENTS

Starpharma's DEP<sup>®</sup> drugs are ideal candidates for combination therapy with IO agents.

- Successful immunotherapy requires a fully functional immune response
  - Unlike standard chemotherapy drugs which may cause immunosuppression, **DEP<sup>®</sup> drugs do not cause myelosuppression**
  - In a phase I study (n=27), DEP<sup>®</sup> docetaxel caused no neutropenia (compared to >>90% with Taxotere<sup>®</sup>)
- Many chemotherapy drugs require immunosuppressive steroid pre-treatment due to formulations containing detergent (e.g. polysorbate 80)
  - **DEP<sup>®</sup> products are water soluble** with formulations not requiring polysorbate 80, **therefore patients do not require steroid pre-treatment**



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# Outlook

## VIVAGEL® PORTFOLIO



Launch of VivaGel® BV in Europe & other markets



Working together with FDA to address request for confirmatory data



Further VivaGel® BV licences for India, Canada & Israel currently under negotiation



Further regulatory approvals for VivaGel® BV



Revenue from VivaGel® BV - milestones and sales/royalties



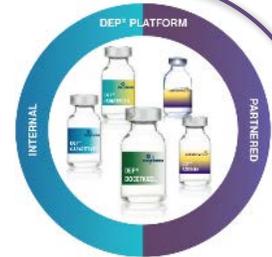
Launch of VivaGel® condom in Japan and approvals/launch in additional regions, such as Europe & China



Ophthalmic development / co-development (SPL7013 ophthalmic drops)



## DEP® PORTFOLIO



Progress with DEP® docetaxel & DEP® cabazitaxel clinical trials



DEP® irinotecan trial commencement – possible combination studies



Other DEP® program developments, including new DEP® candidates, DEP® radiotherapeutics



AstraZeneca

AstraZeneca program developments, AZD0466 IND filing / trial start & revenue from milestones; deals for further compounds



Other partnered DEP® deals and program developments, which includes Antibody Drug Conjugates (ADCs)



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