

9 August 2005

# CEO PRESENTATION AUSTRALIAN BIOTECHNOLOGY EXPO

Attached is a copy of Dr John W Raff's presentation to the 2005 Emerging Growth Capital Annual Australian Biotechnology Expo, held in conjunction with the Australian Stock Exchange in Sydney today.

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#### **About Starpharma:**

Starpharma Holdings Limited (ASX:SPL, USOTC:SPHRY) is leading the world in nanomedicine. Its lead product in development is VivaGel™, a vaginal microbicide gel that has been developed for women as a preventative against the sexual transmission of HIV. It has also shown activity in animal studies for the prevention of other sexually transmitted infections including genital herpes. The Company has a broad range of opportunities arising from its innovations involving the discovery and development of pharmaceutical nanotechnology products using dendrimers and the multi-binding phenomenon of polyvalence. Development programs include multi-acting respiratory and anti-cancer applications.

Starpharma also has equity interests in two companies:

- Dendritic NanoTechnologies, Inc. (DNT) established with the pioneer of dendrimer nanotechnology Dr Donald A. Tomalia and based in Michigan, USA.
- Dimerix Biosciences Pty Ltd a specialist drug development company established to commercialise unique technology developed at the Western Australian Institute for Medical Research in the new field of receptor coupling, specifically G-Protein coupled receptors ("GPCRs").

**Microbicides:** A microbicide inactivates, kills or destroys microbes. Microbicides may be formulated as gels, creams, sponges, suppositories or films with the purpose of reducing significantly the incidence of STDs. There are currently no vaginal microbicides on the market. They are intended for vaginal or rectal use to afford protection for varying periods, from several hours up to days. Microbicides may also be designed to have a contraceptive function by inhibiting sperm.

**Dendrimers:** Dendrimers are a type of nanoparticle. They are man-made chemicals that form tiny balls made up of a dense network of branches. Dendrimers have applications in the medical, electronics, chemicals and materials industries.

American Depositary Receipts (ADRs): Starpharma's ADRs trade under the code SPHRY (CUSIP number 855563102). Each Starpharma ADR is equivalent to 10 ordinary shares of Starpharma as traded on the Australian Stock Exchange. The Bank of New York is the depositary bank.

#### For further information:

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# **Australian Biotech Expo**

9 August 2005

# Starpharma Holdings Limited (ASX: SPL)

Dr John W. Raff CEO Starpharma

# Who is Starpharma?



**Business:** Globally pre-eminent in the Development and commercialisation of

new pharmaceuticals using 'dendrimers' (highly defined nano-scale

structures)

Competitive

Advantage:

First and only pharmaceutical development company to have had the

US Food & Drug Administration ("FDA") approve trials in humans of a

dendrimer nanotech engineered pharmaceutical - VivaGel™ (a

vaginal microbicide with protective properties against the transmission of HIV & sexually transmitted diseases).

Securities Listed: Australian Stock Exchange (ASX: SPL)

IPO September 2000

Level 1 American Depositary Receipts Program (USOTC:SPHRY - CUSIP number 855563102)

Depositary bank: The Bank of New York

January 2005

**Established:** 1996 - Melbourne, Australia

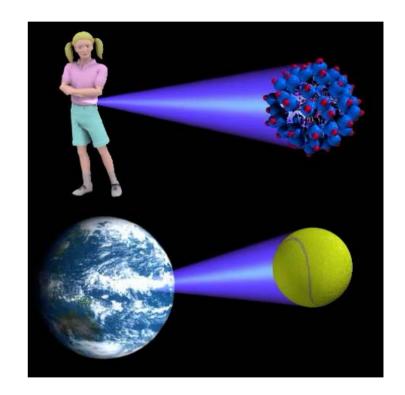


Starpharma's Melbourne Head Office & Laboratories (level 6)

# **Nanotechnology**



- Purposeful manipulation of matter smaller than 100 nanometres ("nm").
- Nanotechnology will revolutionise manufacturing and pharmaceutical compounds.
- Nanotechnology is the largest US
   Federally funded science initiative
   since it decided to put a man on the
   moon. (In 2004, US Government
   invested USD1.6B)



## **Nanopharmaceuticals**

We are in the right place at the right time





- c. 50% of all new drugs derived from biotechnology companies.
- Big Pharma pipeline thin: many drugs coming off patent in the next 3 years.
- Industry leaders predict new drug focus on "wellness" and preventative medicines.

- "Revenue from nanotechnology-enabled products to equal IT and Telecom by 2014, exceed biotech by 10 times."
- "Revenue of products incorporating nanotechnology projected to have a CAGR of > 800% over next 10 years (currently US\$13 billion)."
- "In 2014 16% of goods in healthcare and life sciences by revenue will incorporate emerging nanotechnology."

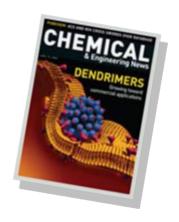
Lux Research, October 2004 www.luxresearchinc.com

### **Nanopharmaceuticals**

Well- defined structures are everything: Dendrimers



- Regulatory Authorities around the world emphasise that nanostructures must be well defined for medicinal use.
- Starpharma is a world leader in defined synthetic nanostructures
   Dendrimers
  - IP ownership
  - synthesis
  - regulatory development of pharmaceutical quality





Dendrimer: a well defined branching macromolecule

Starpharma has the world leading position in the use of dendrimers as pharmaceuticals

# Starpharma's Growth Strategy and Drivers of Value

#### **Product Focus and Leverage of Shareholders' Funds**



#### VivaGel<sup>TM</sup>

- Further clinical development; advancement to efficacy trials
- Line extensions: Expanded indications (other STIs) and applications (condom coating)
- New Dendrimer Products through in-house and collaborative programs
  - additional therapeutic areas e.g. diabetes, wound healing, antibodies, antivirals, glycodendrimers
- Leverage investment through public funding
- Leverage via DNT
  - Increased presence in U.S. markets
  - Broad, expanded program to exploit applications complementary to pharmaceuticals

#### **VivaGeITM**

#### **Topical Vaginal Gel for the prevention of HIV and STIs**



# What does it offer?

#### Safe sex

- a way for a women to avoid STIs
- · discrete with broad cultural acceptability
- female controlled (unlike condom).

# How does it work?

#### **Broad spectrum microbicide**

- •To prevent the transmission of HIV, genital herpes and other STIs.
- Applied privately before sexual activity
- •The active ingredient targets the pathogen and prevents infection.
- •Microbicides now recognised as the main opportunity for HIV prevention.

# Target Markets:

#### Strong target market in the developed world

Estimated HIV prevention market: over US\$1B

•Genital Herpes prevention US\$1B

•Other STIs US\$1.5B

•Condom coatings US\$300M-500M

#### Major medical and social need worldwide

Already over 40 million people are infected worldwide with HIV

#### **VivaGeI**<sup>TM</sup>

#### World's first defined nanopharmaceutical tested in humans.



#### **Development Stage:**

2004: Completed initial

Phase I (IND).

2005: Expanded clinical

program

#### **Line Extensions:**

- Combination products (NIH Funding)
- Condom coatings



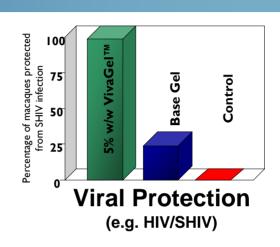
#### VivaGel™ Product Benefits

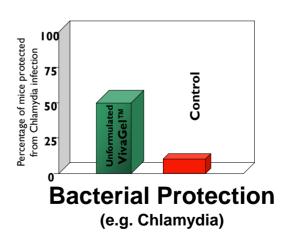
#### A practical and versatile microbicide



# Evidence to date suggests that VivaGel™ is:

- Potent activity against HIV/SHIV demonstrated in vitro and in vivo
- Active against other STDs
- Non-toxic
- Non-irritating
- Compatible with condoms
- Affordable low manufacturing cost
- Passes key FDA hurdle
  - is a well-defined chemical entity





# **VivaGel™ Commercial Strategy**

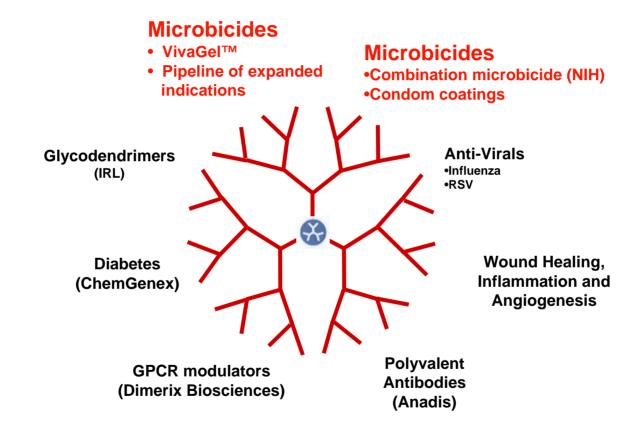


- •Initial focus on market in developed world.
- Pursue HIV & Genital Herpes indications first
- •Subsequently: continue evaluation of product for additional indications (other STIs, e.g. Chlamydia, HPV etc)
- Parallel development of combination microbicides
- •Line extension via other next-generation products, e.g. condom coatings
- •Discussions underway with potential commercialisation partners in several of the above categories.
- •Capitalise upon the epidemic nature of STIs to access non-dilutive development capital.

## **Starpharma's Development Portfolio**

#### **Products and Partnered Projects**





# **Dendritic Nanotechnologies Inc. (DNT)**

#### **Significant Value Driver and Strategic Partner**



Private US company



www.dnanotech.com

- Existing revenue streams from deals with:
  - Dow Chemical Company,
  - Pfizer, Inc.,
  - Sigma Aldrich,
  - US Dept. Defense
- Dow recently transferred their entire dendrimer nanotech portfolio of patents to DNT (196 patents/ 41 patent families)
- SPL holds 33%; other major shareholders The Dow Chemical Company (30%), founders
- Breakthrough technology in ultra-low manufacturing costs
- DNT's commercial development opportunities include:
  - drug delivery
  - imaging & contrast agents
  - in-vitro diagnostics, gene transfection, nanosensors

# Recent US perspectives on Starpharma



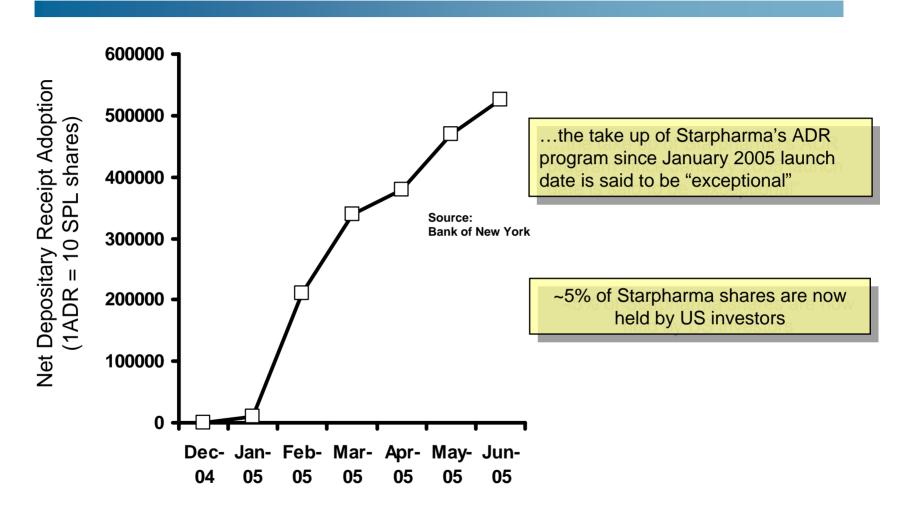
"Top 5 Nanotech Breakthroughs for 2004"

"Top Nanotech Buys for 2005"

Forbes / Nanotech Wolfe Report "We expect great things to come from [Starpharma] and its significant ownership in U.S.-based Dendritic Nanotechnologies, Inc."

## **US** demand for Starpharma shares





#### Financials and Shareholder Profile



- •\$8.2 million cash in the Bank (June 30)
- •Existing leverage of development spend through NIH grant US\$5.4M and AU\$5.6M of P3 funding
- •Several more near-term opportunities for further non-dilutive development support

Shares on issue	111,235,000
Issued Capital held by	
*Australian Financial Institutions	~30%
*Directors	20%
*US investors (via ADRs)	~5%

# **Starpharma: Investment Highlights**



- Dominant global position in Nanopharmaceuticals
- Product focus: VivaGel<sup>™</sup> significant global market opportunity for HIV and other STI's
- Leverage of shareholders' investment through public funding
- Industry-leading expertise in the development of dendrimers for use as pharmaceuticals
- Growing US demand for equity rapid take-up of ADR's
- Via its stake in DNT, SPL has access to a vast patent estate, commercial partners and exposure to broad applications of dendrimers

"In 2014 16% of goods in healthcare and life sciences by revenue will incorporate emerging nanotechnology."

Lux Research, October 2004 www.luxresearchinc.com

An investment in Starpharma is a way to capitalise on this industry transition



"Top Nanotech Buys for 2005"

Forbes/Wolfe

"Top 5 Nanotech Breakthroughs for 2004"

Forbes/Wolfe

"Growth Strategy Leadership Award in the World Nanobiotechnology Market"

Frost and Sullivan July 2005