

22 June 2006



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**SUPPL**

Securities and Exchange Commission,  
Division of Corporation Finance,  
450 Fifth Street, N.W.,  
Washington, D.C. 20549

Dear Sirs,

INFORMATION REQUIRED PURSUANT TO RULE 12g3-2(b)

We are enclosing copies of all information that has been made public, filed with a stock exchange or sent to security holders since 5 May 2006. The first release after this date was on 14 June 2006 .

Yours faithfully,

B.P. Rogers  
Company Secretary

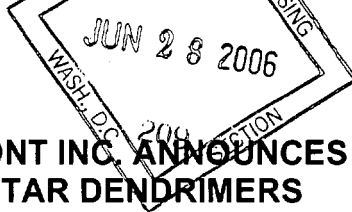
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**JUN 30 2006**

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## STARPHARMA INVESTEE COMPANY DNT INC. ANNOUNCES COMMERCIAL ROLL OUT OF PRIOSTAR DENDRIMERS

**Tuesday 20<sup>th</sup> June, 2006.**

Dendritic NanoTechnologies, Inc. ("DNT"), an investee company of Starpharma Holdings Ltd (ASX:SPL, USOTC:SPHRY), announced overnight in Chicago at the National Plastics Exhibition the availability of a new class of dendrimers called Priostar™ on a limited basis to the commercial sector. A copy of the DNT press release is attached.

Priostar™ dendrimers are a relatively low cost mechanism for producing precision nanostructures that have broad commercial applications in industry and medical technology such as surface coatings, sensors, catalysts, nanofabrication, solid state lighting, surfactants, binders, antimicrobials, lotions, cosmetics, pigments, dyes, ion exchange media, and ultrafiltration.

Starpharma is the largest shareholder in DNT, with a 33% equity holding, and also has commercialisation rights for DNT technology in polyvalent pharmaceutical applications.

### Further information

**Starpharma Holdings Limited** (ASX:SPL, USOTC:SPHRY) leads the world in the application of nanotechnology to pharmaceuticals. The Company's lead product in development is VivaGel™ (SPL7013 Gel), a vaginal microbicide designed to prevent the transmission of STIs, including HIV and genital herpes.

VivaGel™ is the first example of a product to come from Starpharma's dendrimer-based discovery pipeline, which also includes specific programs in the fields of ADME Engineering™ (using dendrimers to control where and when drugs go when introduced to the body), Polyvalency (using the fact that dendrimers can activate multiple receptors simultaneously) and Targeted Diagnostics (using dendrimers as a scaffold to which both location-signaling and targeting groups are added to allow location of specific cell type, such as cancer cells).

Starpharma also has equity interests in two companies:

- *Dendritic NanoTechnologies, Inc. (DNT)* – a US company established with the pioneer of dendrimer nanotechnology Dr Donald A. Tomalia and in which the Dow Chemical Company holds 30% equity ; and
- *Dimerix Bioscience 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").

**Dendrimers:** A type of precisely-defined, branched nanoparticle. Dendrimers have applications in the medical, electronics, chemicals and materials industries.

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## Dendritic Nanotechnologies Announces Initial Roll-Out of New Priostar Dendrimer Family

06-19-2006

*DNT's dendritic polymer nanotechnology offers wide range of applications across industrial, diagnostics and medical industries*

CHICAGO (National Plastics Exhibition)—June 19, 2006—Dendritic Nanotechnologies Inc. (DNT), a technology company that develops advanced dendritic polymers used to produce commercial products, today announced that Priostar™ dendrimers are available on a limited basis to the commercial sector. This new product line of nanoscale building blocks represents a year-long effort by DNT to drive down the manufacturing costs associated with nanotechnology, and to refine the technology for mass-market commercialization.

DNT is exhibiting in Booth 584 at this year's National Plastics Exhibition to introduce Priostar to the plastics community and to demonstrate how nanotechnology can be harnessed by materials manufacturers as they address new market opportunities.

"The National Plastics Exhibition comes at a perfect time for DNT as we are ramping up our production on Priostar," said Ryan Hayes, DNT's director of business development. "We are eager to work with scientists in the industrial sector who are wrestling with complex formulation and manufacturing problems. We believe we can solve many of these with our Priostar dendrimers and provide them with alternatives to ground-down nanoparticles."

### **Priostar dendrimers offer new opportunities to plastics manufacturers**

Priostar dendrimers represent the synergistic combination of polymers with nanotechnology. They are a part of the fourth class of polymer architectures defined as dendritic polymers. The nanoscale size and dendritic (or highly branched) nature of these precision polymeric nanostructures provide new properties and reactivity that has been known at the research level for a number of years, but lacked an affordable dendrimer to commercialize.

In addition to reduced cost, the new dendrimer family has added benefits such as improved thermal and hydrolytic stability. These are important considerations for handling, shelf-life, shipping, and final product stability. Initially, Priostar dendrimers could be used as high-performance additives to address polymer manufacturers' need for new technologies that can reduce curing times, enable them to process additives into a new formulations, or improve strength and durability.

"These improvements should lead to the evaluation of dendrimers for applications in which dendrimers were previously dismissed—even though they witnessed unique property enhancements," stated Dr. Robert Berry, CEO of DNT. "In addition, Priostar offers the added benefit of new patent life which provides our business partners an opportunity to protect their market sectors. We are aiming to establish a limited number of business partnerships for commercial research that could lead to direct commercialization."

### **About Priostar Dendrimers**

The Priostar family of dendrimers share and improve upon the physical properties of the widely researched STARBURST™ PAMAM dendrimers, which were invented by Dr. Donald Tomalia, DNT's president and chief technology officer. The size and shape of a dendrimer are determined by shells (known as generations) grown around a core structure, while the reactivity of the dendrimer is determined by its surface chemical functionality, together with size and shape. The ability to attach chemical compounds to the surface or to encapsulate them within the interior of the dendrimer have made STARBURST dendrimers attractive to pharmaceutical, biotechnology and materials companies.

The Priostar family of dendrimers serves as a major nanostructure platform that will have broad commercial application. These dendrimers will find value in the industrial sector as they will help develop new products and improve existing technologies for surface coatings, sensors, catalysts, nanofabrication, solid state lighting, surfactants, binders, antimicrobials, lotions, cosmetics, pigments, dyes, ion exchange media, and ultrafiltration.

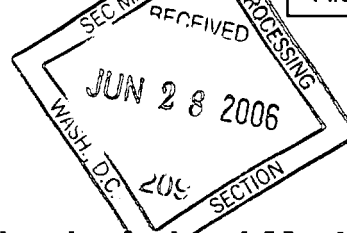
**About DNT**

DENDRITIC NANOTECHNOLOGIES INC. (DNT) develops dendrimer structures that assist business partners in producing commercial products – where dendrimers are the added value differentiator. DNT was incorporated in 2003, is a U.S. company with 16 employees, and is located in Mount Pleasant, Michigan. DNT's technology development is directed by Donald A. Tomalia, Ph.D., President and Chief Technical Officer. Dr. Tomalia is the inventor of dendrimers and has led numerous commercial developments during a 25-year management and senior scientist career with The Dow Chemical Company.

Dendrimers are nanostructures with specific, precise and predictable physical properties that make them especially useful for pharmaceuticals, medical imaging, electronics, materials, and the mass commercial markets. DNT has a broad and comprehensive IP portfolio that comprises over 200 patents in 41 patent families—a unique level of IP concentration among nanotechnology companies—and has existing licensing agreements with established revenue streams for dendrimer technology. See <http://www.dnanotech.com>.

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## VivaGel™ is a Potent Contraceptive in Animal Model

**Melbourne, Australia 14 June 2006.** Starpharma Holdings (ASX:SPL, USOTC:SPHRY) today announced the results of a study which has shown that SPL7013, the active ingredient in its lead product VivaGel™, exhibits a potent contraceptive effect in a rabbit model.

In the independent study undertaken at Johns Hopkins University (Baltimore, USA) two different formulations containing 3% SPL7013 (the dose level used in VivaGel™) resulted in a 75% and 95% reduction respectively in the number of embryos in rabbits compared to an inactive control gel. These contraceptive effects are statistically comparable to published results of marketed contraceptive products based on the detergent nonoxynol-9 (N9). (*Refer to full results below*).

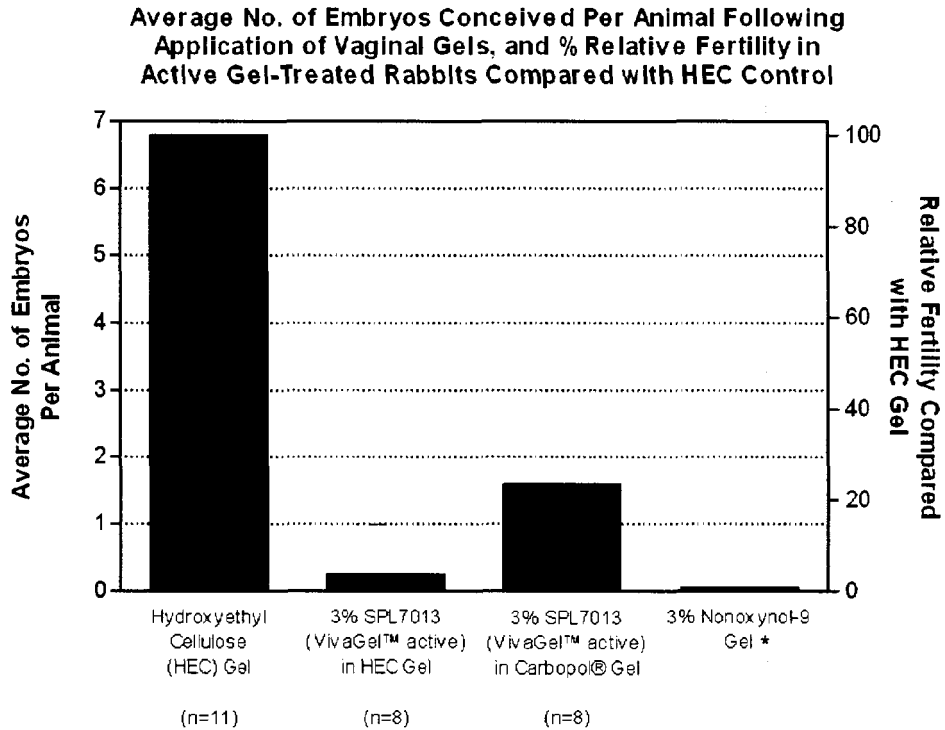
VivaGel™ is already in clinical development as a topical microbicide for the prevention of HIV and genital herpes infection in women. If the contraceptive activity that has been observed in these initial animal studies were confirmed in humans it would allow for the development of VivaGel™ with contraception as an additional claim.

Starpharma's CEO Dr John Raff said: "This is a very exciting finding for the company and is of significance to the development of both the condom coating and stand-alone versions of VivaGel™. Studies in a number of countries including the US show that contraceptive activity is a very highly valued microbicide characteristic amongst women. From such studies we anticipate that if this finding of contraceptive activity were confirmed in humans, it would increase the uptake of VivaGel™ considerably."

Importantly, and in contrast to other topical contraceptives such as detergents, VivaGel™'s contraceptive effect is not achieved through an impact on sperm motility or viability. VivaGel™ does not have a significant effect on either, and its contraceptive effect is postulated to be via interference with attachment and/or fertilization. This proposed mechanism is consistent with the positive safety profile previously demonstrated in animal studies in VivaGel™.

This work was conducted under NIH Grant No. U19 AI60598 from the National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health.

## Appendix: Results of the animal trial and additional detail



\* Based on published historical data, Castle et al, see below

Groups of 8-11 rabbits were pre-treated with either active or control gels prior to artificial insemination with semen and the number of embryos formed was measured after 14 days.

The contraceptive effect of formulations containing 3% SPL7013 was compared with that of an inactive control gel (hydroxy ethyl cellulose, HEC). Rabbits typically have more than one embryo per pregnancy. The control group showed 75 embryos whereas the rabbits pre-treated with VivaGel™ showed only 13 embryos and the group pre-treated with SPL7013 in hydroxyl ethyl cellulose applied showed only 2 embryos.

SPL7013 in both the VivaGel™ formulation and when formulated at 3% SPL7013 in the HEC gel, produced a statistically significant reduction in the number of pregnant animals when compared with the inactive control gel (Fisher's exact two-sided test,  $P < 0.024$  in both cases).

Fertility, as assessed by the average number of conceptions in 8 animals, was reduced by more than 75% by SPL7013 in its VivaGel™ formulation and 95% by SPL7013 in HEC when compared with the inactive control gel alone.

Prior similar tests of contraceptive gels based on the detergent nonoxonyl-9 yielded similar reductions in conceptions ranging between 83% to 100% (See Castle et al, Contraception 1998;58:51-60, and Zeitlin et al, Sexually Transmitted Diseases, 2001;28:417-23).

In previous studies VivaGel™ has been shown to be non-teratogenic (does not cause defects in developing fetuses) and in laboratory studies in which VivaGel™ has been shown to be non-mutagenic (does not cause genetic mutations in cells).

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## Further information

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VivaGel™ is the first example of a product to come from Starpharma's dendrimer-based discovery pipeline, which also includes specific programs in the fields of ADME Engineering™ (using dendrimers to control where and when drugs go when introduced to the body), Polyvalency (using the fact that dendrimers can activate multiple receptors simultaneously) and Targeted Diagnostics (using dendrimers as a scaffold to which both location-signaling and targeting groups are added to allow location of specific cell type, such as cancer cells).

**Dendrimers:** A type of precisely-defined, branched nanoparticle. Dendrimers have applications in the medical, electronics, chemicals and materials industries.

**Microbicides:** A microbicide inactivates, kills or destroys microbes such as viruses and bacteria. Microbicides may be formulated as gels, creams, sponges, suppositories or films with the purpose of reducing significantly the incidence of STIs. 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.

Media	Starpharma <a href="http://www.starpharma.com">www.starpharma.com</a>		
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# **Starpharma Holdings Limited**

**ASX:SPL**

**USOTC:SPHRY**

**eG Capital**

**Australian Bio-Investment Forum**

**14 June 2006**

**Dr Jackie Fairley – Chief Operating Officer**

**“Top Nanotech Buys for 2005”**

*“We expect great things to come from the company and its significant ownership in U.S.-based Dendritic Nanotechnologies, Inc.”*

**Forbes/Wolfe 2005**

**“Growth Strategy Leadership Award in the World  
Nanobiotechnology Market”**

**Frost and Sullivan July 2005**



*This presentation contains forward-looking statements that involve risks and uncertainties.*

*Although we believe that the expectations reflected in the forward-looking statements are reasonable at this time, Starpharma can give no assurance that these expectations will prove to be correct. Actual results could differ materially from those anticipated, because of various important factors, risks and uncertainties. These include risks associated with drug development and manufacture, risks inherent in the extensive regulatory approval processes mandated by regulatory authorities, delays in clinical trials, future capital needs and general economic uncertainty. Also, there can be no assurance that others will not independently develop similar products or processes or design around patents owned or licensed by the Company, or that patents owned or licensed by the Company will provide meaningful protection or competitive advantages.*

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***Outline***

1. Company Overview
2. VivaGel™ – Product Overview
3. VivaGel™ – Excellent Market Opportunities
4. Pipeline
5. Equity Holding in Dendritic Nanotechnologies Inc
6. Conclusion

# ***1. Company Overview***

## ***Company Overview***

- Starpharma Holdings Limited ('Starpharma') (ASX:SPL) is a world leader in the development of nanotechnology based pharmaceuticals (dendrimers)
- Starpharma's lead product, **VivaGel™** is being developed as a microbicide to prevent the sexual transmission of **HIV** and **Genital Herpes**
- **US\$20.3m NIH funding** to develop VivaGel™ for HIV (Oct '05) **FDA Fast Track status** (Jan '06)
- **NIH clinical support** for Genital Herpes (Apr '06)
- Two **line extensions** to VivaGel™ also in development and broad **portfolio** of other dendrimer projects
- Equity stake in US company **DNT Inc.**
- Successful ADR program ~ **7.2% shares on issue**; growing at ~ 9% per month

### Financial Snapshot

Market Cap:	~ A\$60-70M
Institutional Investors:	~ 30%
Shares on Issue:	147M
Cash:	A\$15.4 M (March 06)

## **2. VivaGel™**

### **Product Overview**

## **VivaGel™ - Lead Product for Prevention of STIs**



VivaGel™ packaged into pre-filled applicators.



- VivaGel™ is a microbicide being developed to prevent sexually transmitted infections (STIs) in women
- VivaGel™ is a gel-based formulation with a nanotech active, delivered privately via an applicator prior to sexual activity
- The active ingredient of VivaGel™ (SPL7013) inactivates HIV and HSV-2 (genital herpes) virus by binding with the virus preventing it attaching to the host
- Vaccines against HIV and genital herpes have thus far failed and there is a significant and growing recognition that microbicides offer the best alternative

**VivaGel™ offers an attractive first line defence against the spread of HIV and genital herpes**

## ***HIV - A Preventable, Life Threatening Disease***

- Human Immunodeficiency Virus (HIV) is the virus that causes AIDS (Acquired Immune Deficiency Syndrome)
- No cure for HIV/AIDS and may be transmitted by individuals that are asymptomatic
- 39 million people living with HIV; every day 7,000 women are newly infected
- The predominant route of transmission is via heterosexual contact
- More than 50 HIV vaccines have failed and estimates are that an effective vaccine is many years away
- Although when used condoms are effective in preventing HIV, in practice they are not used consistently or correctly

**HIV and AIDS (in the US): "Direct medical costs of up to \$15.5 billion per annum"**

**"AIDS is the number one cause of death in African-American women aged 25-34"**

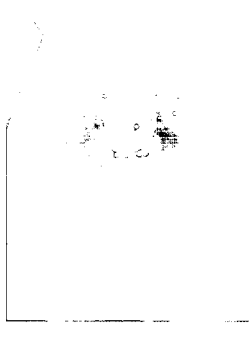
**"HIV prevention options as of 2005 are not enough"**

**best option... technologies like microbicides which women can initiate and control"**

Source: Microbicide Development Act 2005: US Senate

## ***Genital Herpes – Nasty, Incurable Disease***

- Genital herpes is the “un-recognised pandemic” of the industrialised world
  - **22%** of the US adult population has genital herpes; Est. cost (US) >\$1.5B pa
  - Without intervention the prevalence of genital herpes in the US is expected to increase to **39%** of men and **49%** of women by 2025
- Infection is life-long, drugs do not cure
- Results in painful blisters/ulcers
  - Ulcers last 3-4 weeks; 4-5 ulcerative episodes p.a
  - Increases affected individuals' risk of HIV infection by 4-8x
- May be transmitted by individuals who have no visible ulcers
- Transmissible at birth:
  - Ocular, neurological and respiratory disease
  - Long term complications in 40%; death in 14%
- Existing prevention methods have proven ineffective and developmental vaccines disappointing



**Genital herpes is a widespread, incurable, life long condition that can be transmitted unknowingly**



## ***VivaGel™ – Product Features and Performance***

### **Product Offers Several Key Advantages**

Market research indicates microbicide gels will have good uptake  
 Female controlled, discreet and convenient  
 Compelling competitive advantages: efficacy; non-irritant; broad activity\*  
 Compatible with condoms

### **Excellent Clinical Results in Human and Primate Trials**

Human trials: VivaGel™ is non-toxic and non-irritating  
 Potent activity in relevant HIV strains in very tough primate trials  
 Potent activity against herpes in animal trials  
 Viruses appear not to develop resistance to VivaGel™

### **Excellent Drug Characteristics**

Lower risk development – Topical gel, external to body  
 Affordable – Low manufacturing costs  
 Excellent IP position  
 Passes key FDA hurdle – Well defined chemical entity

*\*See appendices for further detail as to how VivaGel™ compares to competitive products in development*

## ***VivaGel™ – Significance of NIH support & Fast Track Status***

**US\$20.3m + of non-dilutive funding from US-based NIH**

- Funding is provided without downstream commercial obligations
- Funding will allow Starpharma to take product to market itself or secure a late-stage licensing deal

**Significantly ‘de-risks’ VivaGel™**

- NIH funding will support VivaGel’s development including:
  - Clinical (HIV and **now HSV-2**) and non-clinical trials,
  - Scale-up of manufacturing through to the final large-scale population study and
  - Access to world class clinical development expertise.

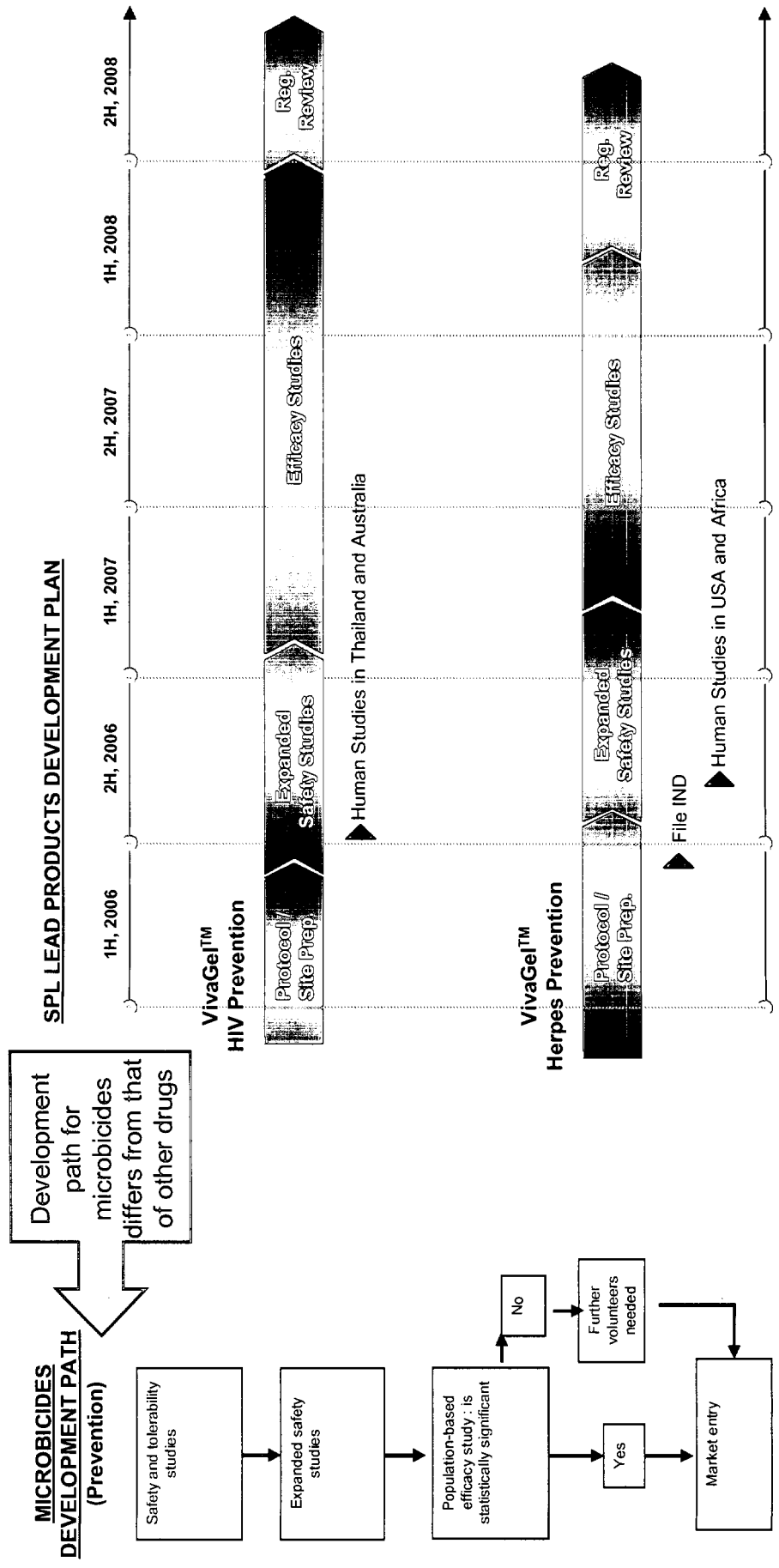
**Strong Endorsement of VivaGel™**

- FDA *Fast-Track* for VivaGel™ for HIV means:
  - Faster review of the NDA application( 6 months rather than 13)
  - Greater access to and input from the FDA into development program

**Significantly enhances probability that VivaGel™ will be successfully developed and commercialised**

- The NIH selected VivaGel™ as the candidate for development support following a 12+ month evaluation period

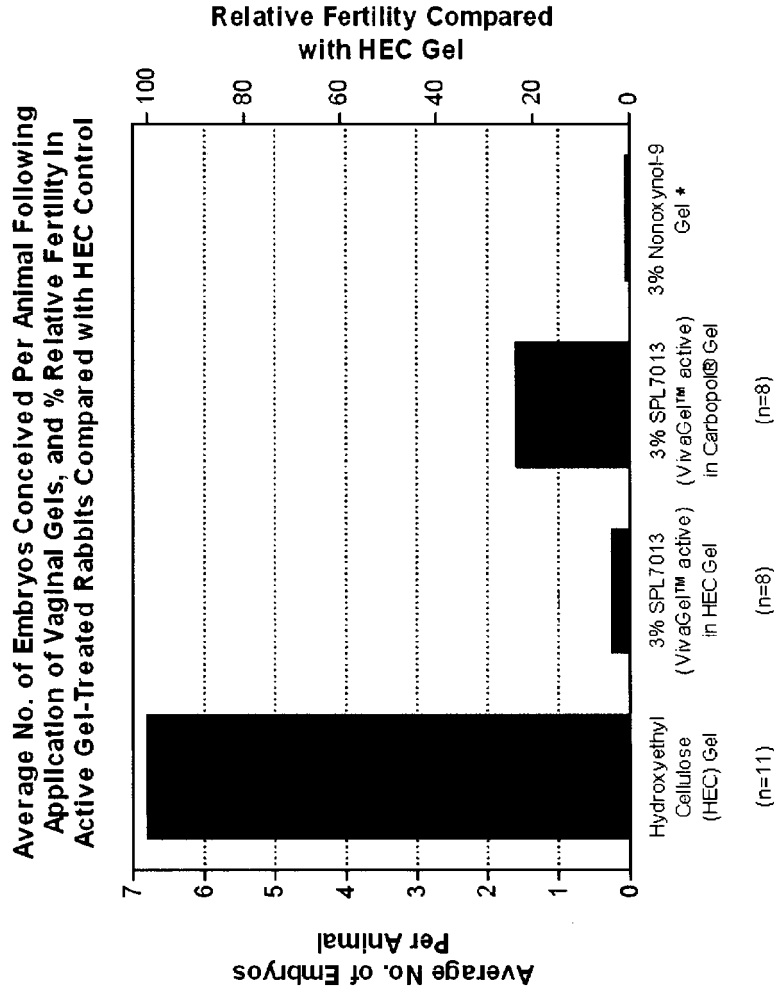
# VivaGel™ - Development Path



**Lead products are entering significant clinical development phases in next 6 months**

## VivaGel™ is a Potent Contraceptive Activity in Rabbits

- Recent study has shown that SPL7013, the active ingredient in its VivaGel™, exhibits a potent contraceptive effect in rabbits
- Independent study undertaken at Johns Hopkins University under an NIH grant
- Fertility was reduced by more than 75% by SPL7013 in a VivaGel™ formulation and 95% in a HEC gel compared with an inactive gel
- If contraceptive activity is confirmed in humans it would allow for development with contraception as an additional claim
- Findings relevant to both the stand-alone gel and condom coating opportunities



\* N-9 figure based on published historical data, Castle et al, Contraception 1998;58:51-60, and Zettlin et al, Sexually Transmitted Diseases, 2001;28:417-23

VivaGel™'s active ingredient is a potent contraceptive in animals

**3. VivaGel™**  
**Excellent Market Opportunities**

## ***Commercial Opportunity for Microbicides***

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- **Large, addressable markets:**
  - HIV primarily in developing countries
  - HSV-2 in both developing and developed countries
  
- **Increasing market “pull” for products**
  - US government firmly committed to development of safe and effective microbicides (Microbicides Development Act 2005)
  - US Opinion Leaders now calling for National Herpes Control Program
  
- **Several industry surveys have confirmed strong consumer demand:**
  - Over 20m women in US would use microbicide
  - 30-40% female US college students would buy microbicide; 70% with contraceptive properties
  - Strong market demand at 5x local condom price in various countries

*Source: World Bank; UNAIDS; EC AIDS survey; BCG analysis and various microbicide publications*

## **VivaGel™ – Line Extensions**



### **Condom Coatings**

The most common coating in premium condoms is nonynol-9 (N-9) that is meant to provide spermicidal protection and act as a microbicide

Recent studies have shown that the detergent N-9 actually results in an increase in the rate of infection by HIV and other viruses

Starpharma is already in discussions with a number of potential commercial partners who are exploring replacing N-9 with VivaGel™ as a coating for premium condoms

Likely less onerous regulatory path for VivaGel™ as a condom coating offering a shorter route to market.

### **ComboGel**

Starpharma received US\$5.4 funding from the NIH to develop the 'ComboGel' in partnership with a US company, ReProtect

The 'ComboGel' will combine the active agents in ReProtect's BufferGel with VivaGel™ to generate a combination microbicide with potential to extend spectrum of activity.

## **4. Pipeline**

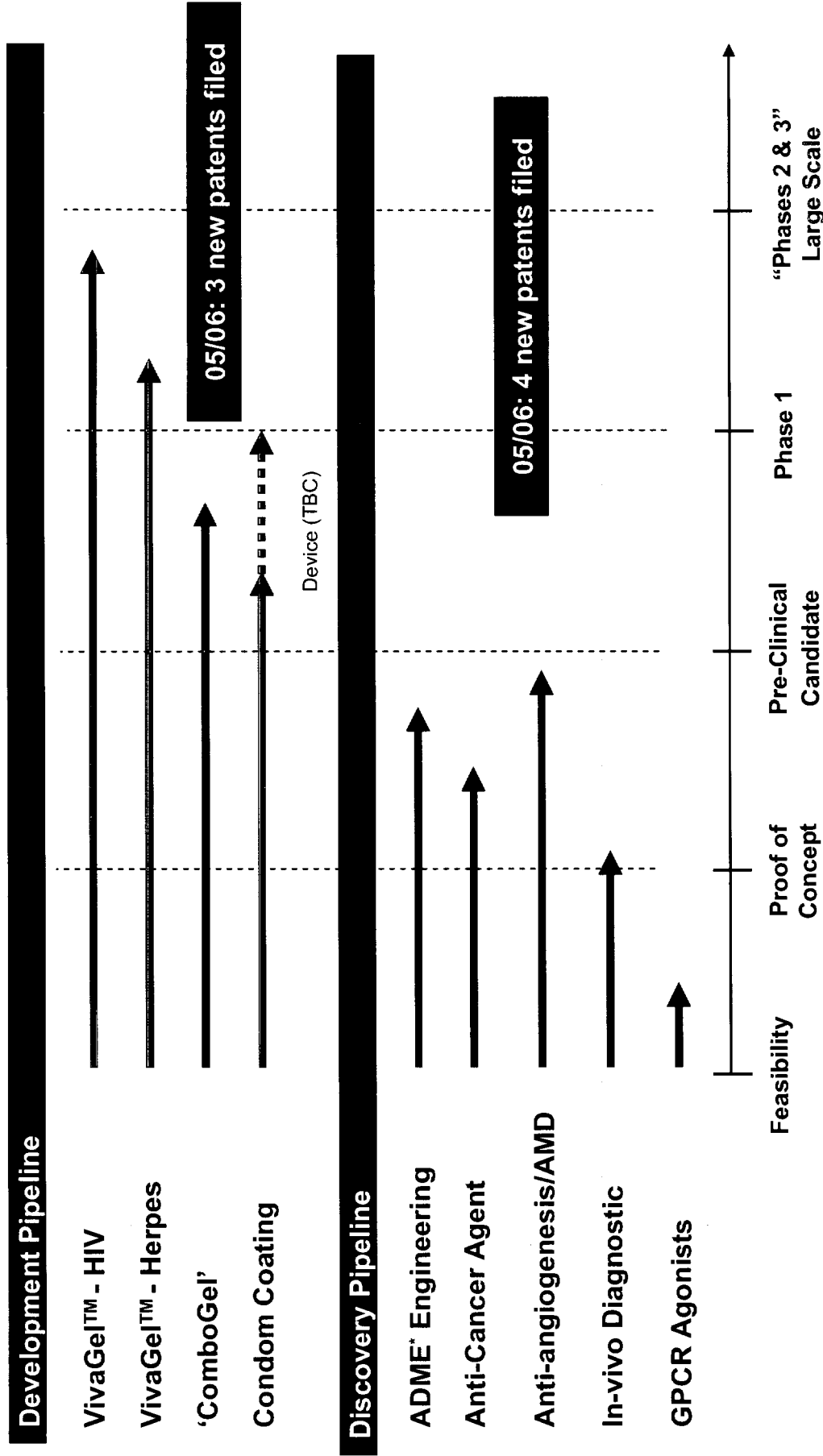


## ***Applications of Dendrimers in Life Sciences***

- **Pharmaceuticals**
  - Polyvalent = multivalent presentation of covalently bound surface groups; activity due to multiple presentation of surface groups
  - “Re-engineering” and/or re-formulation of existing drugs (technical & life-cycle management)
- **Drug Delivery**
  - Small molecules occluded (non covalently) within the dendrimer architecture; alternative to liposomes
  - Molecules attached to the dendrimer which are metabolically released; single molecule alternative to traditional polymer-drug conjugates
- **In vitro Diagnostics**
  - A dendrimer is a key component of the Stratus CS instrument by Dade Behring [FDA - 510(k)]; detects certain protein biomarkers released in the blood stream as a result of heart muscle damage
- **In vivo Diagnostics**
  - MRI contrast agents e.g. Gadomer-17: Schering AG (24 gadolinium chelates covalently attached)
  - Enhanced organ, tissue and/or tumor detection and resolution; optimized PK profile

**Starpharma and DNT have an extremely broad IP portfolio in Dendrimers**

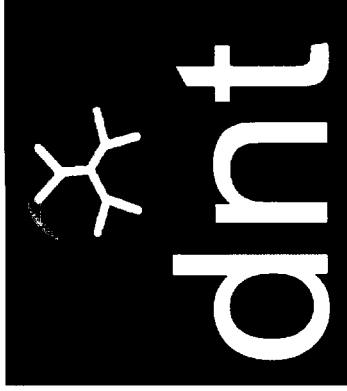
# Starpharma's Pipeline



\* ADME: Absorption Distribution Metabolism Excretion

## ***5. Equity Holding in DNT***

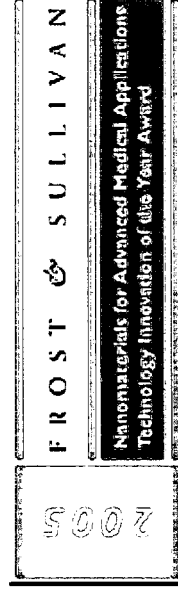
# Dendritic Nanotechnologies Inc. (DNT)



- SPL has a 33% holding in a private US company DNT (The DOW Chemical Company holds 30% DNT equity)
- DNT has existing revenues streams from deals with leading companies including Pfizer Inc; Sigma Aldrich; General Dynamics Corp., Lumera, US Dept. Defense
- Valuable new synthetic methodology (Priostar™) for generating dendrimers cheaper and faster
- Short-term revenue generation opportunities for
  - Specialty Chemicals
  - siRNA (short interfering RNA) transfection reagents
- Longer-term potential to enhance existing drugs
  - solubility enhancement, life-cycle management
  - receptor-targeted diagnostic and therapeutic delivery technology for ovarian cancer

MCaps of Listed US Nanomaterials Companies

COMPANY	MCap (US\$m)
Orthovita	210
Altair	186
Nanogen	117
Nanophase	98
Lumera	57



## ***DNT: Wider Exploitation of Dendrimers***

<b>Initiatives</b>	<b>Status &amp; Funding</b>
<b>Receptor-targeted Diagnostic for Ovarian Cancer</b>	<b>Lead Candidate Screening</b> <ul style="list-style-type: none"> <li>• National Cancer Institute contract (\$850k)</li> <li>• Small Business Administration grant (\$820 k)</li> <li>• NCL Collaboration</li> </ul>
<b>Receptor-targeted Therapeutic Delivery for Ovarian Cancer</b>	<b>Lead Candidate Screening</b> <ul style="list-style-type: none"> <li>–National Cancer Institute contract (\$850k)</li> </ul>
<b>Transfection Reagents for siRNA Delivery</b>	<b>Final Product Testing</b> <ul style="list-style-type: none"> <li>–Ongoing Collaborative Research Initiatives</li> </ul>
<b>Specialty Commercial Products</b>	<b>Product Commercialization &amp; Scale Up</b> <ul style="list-style-type: none"> <li>–Resins &amp; Adhesives</li> <li>–Sanitizers &amp; Disinfectants</li> <li>–Specialized Lubricants</li> <li>–Water Remediation/Filtration</li> </ul> <b>Ongoing Collaborative Research Initiatives</b>

siRNA Reagent Sales \$120 million in 2004 growing 15-18% annually







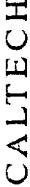






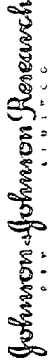
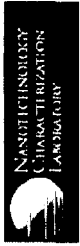




## ***DNT: Exploiting dendrimer properties***

Dendrimers offer the potential for:

- Increased drug solubility
- Reduced drug toxicity
- Increased cellular retention times
- Attachment of targeting moieties
- Product life-cycle management

<b>Solubility Enhancement of Indomethacin and Paclitaxel</b>			
<b>Priostar Dendrimer</b>	<b>Drug</b>	<b>Solubility Enhancement</b>	
<b>DNT-1900</b>	<b>Indomethacin (25 µg/mL)</b>	<b>77x</b>	
<b>DNT-1910</b>	<b>Indomethacin</b>	<b>48x</b>	
<b>DNT-1990</b>	<b>Paclitaxel (0.3 µg/mL)</b>	<b>20x</b>	

# DNT's Business Partners

2005

FROST & SULLIVAN

Nanomaterials for Advanced Medical Applications  
Technology Innovation of the Year Award

## ***6. Conclusion***



## ***Starpharma: Investment Highlights***

**Strong Financial Position:** ✓ A\$15.4M cash (March 2006)

**Track Record Of Delivery / Internationally Recognised Clinical Program:**

- ✓ US\$26m\* non-diluting funding from the NIH (off balance sheet) for VivaGel™ for HIV (Oct. 2005)
  - ✓ Fast Track Status for VivaGel™ (Jan 2006)
  - ✓ NIH also providing additional funding (confidential amount) for VivaGel™ clinical development for Herpes (*April 2006*)
  - ✓ VivaGel™ Phase I trial successful; human trial preparation conducted in collaboration with NIH, trials to commence in Australia, US and Kenya in Q2/Q3 2006
  - ✓ NIH to act as sponsor of the IND application for VivaGel™ for Herpes
  - ✓ Continued strong uptake of ADRs (~7.2% shares)
- Additional Commercial Opportunities:**
- ✓ Progressing commercial arrangements/testing for condom coatings
  - ✓ Dendrimer platform/pipeline and equity stake in Dendrimer Nanotechnologies (DNT) anticipated to yield multiple commercial opportunities

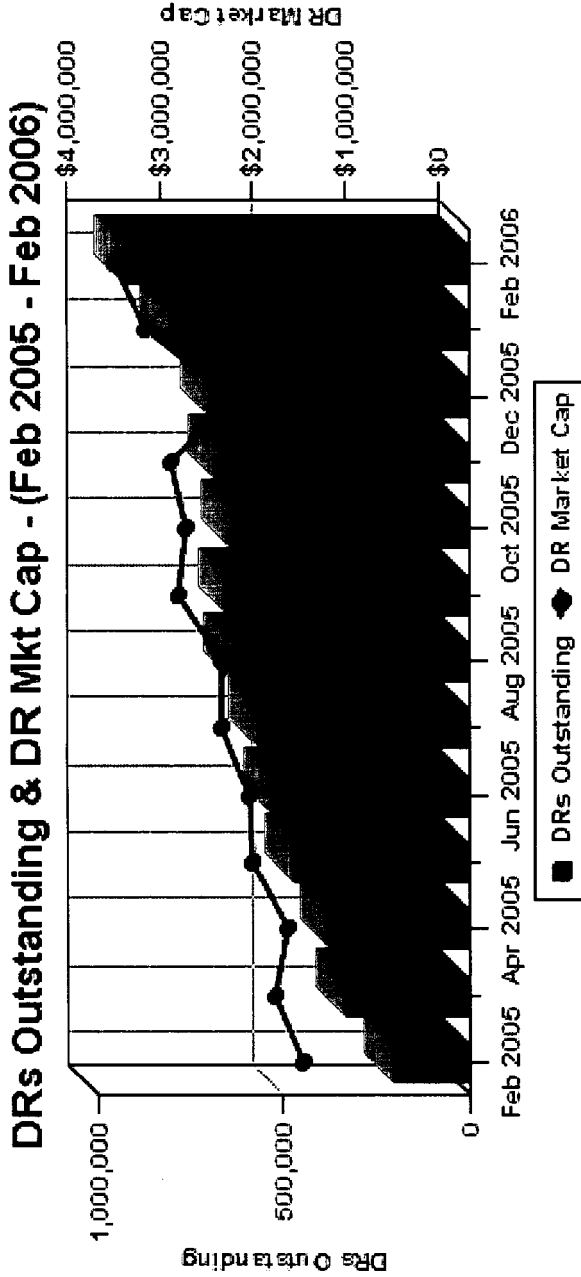
\* Two HIV grants: US\$20.3m contract + US\$5.4m grant (2004)

## **For Further Information:**

1-800-368-7669 [www.starpharma.com](http://www.starpharma.com)

# ***Appendices***

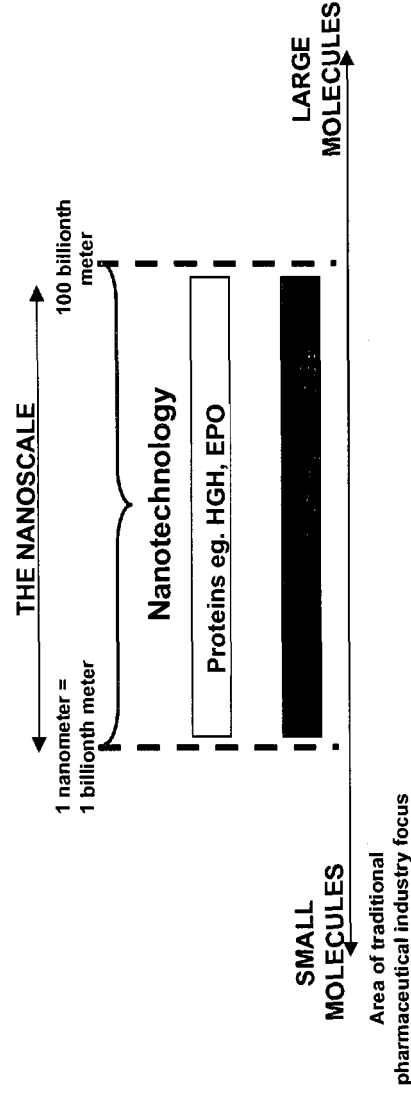
## Starpharma's ADR program



- **Commenced:** January 2005
- **Issued by:** The Bank of New York: USOTC:SPHRY
- **DRs Outstanding:** growing at a rate of 9% (compound) per month
- **ADRs:** represent ~7% of issued capital
- **Major brokers:** Merrill Lynch, Natexis Bleichroeder, Credit Lyonnais, Pershing LLC

## ***Starpharma is a Leader in 'Nanopharmaceuticals'***

- Nanotechnology is the manipulation of matter smaller than 100 nanometres ('nm')
- Starpharma is a leader in developing dendrimers as drugs (VivaGel™ represented the first IND for a dendrimer)
- Dendrimers are highly branched macromolecules offering
  - Multiple binding sites: polyvalency
  - Precise manufacture: consistency of composition
- Dendrimers also have life science applications in drug delivery (liposome-like), diagnostics and contrast agents

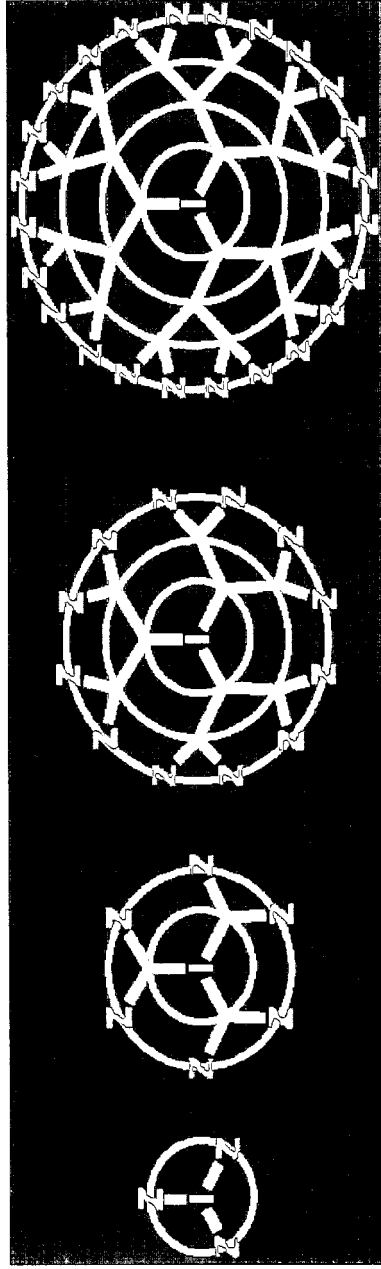


*“by 2014 16% of goods in healthcare and life sciences by revenue will incorporate emerging nanotechnology”*

Lux Research, October 2004

**Starpharma is a world leader in developing dendrimers as pharmaceuticals**

## Dendrimers – Precise Nanoscale Synthetic Chemistry



I = Initiator or core

Y = Branching unit

= Linker between Y and Z

Z = Surface group

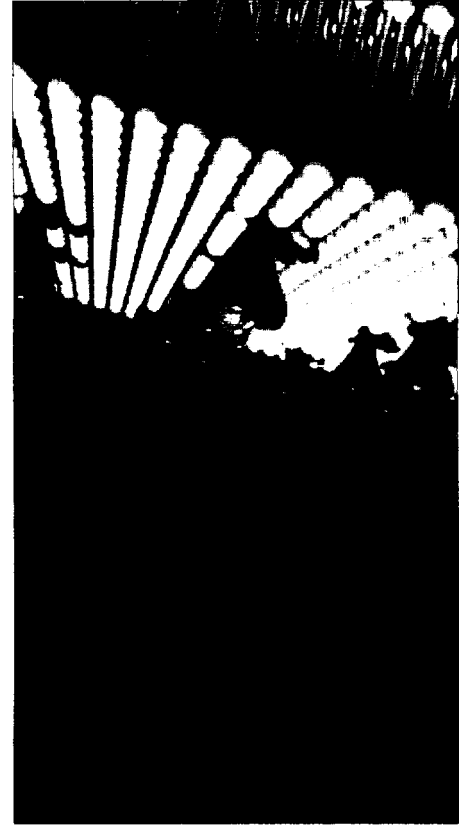
Size

- Molecular weight
- Distance of span or volume

Surface group/s

- Number
- Type

# Dendrimers - a Platform for Polyvalent Interactions

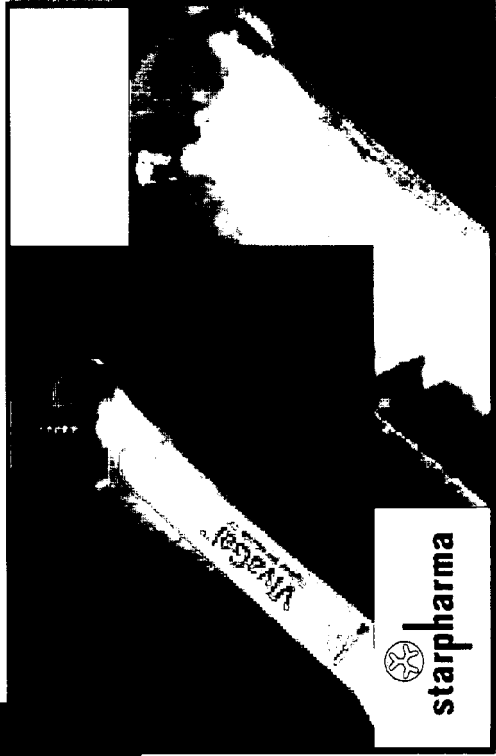
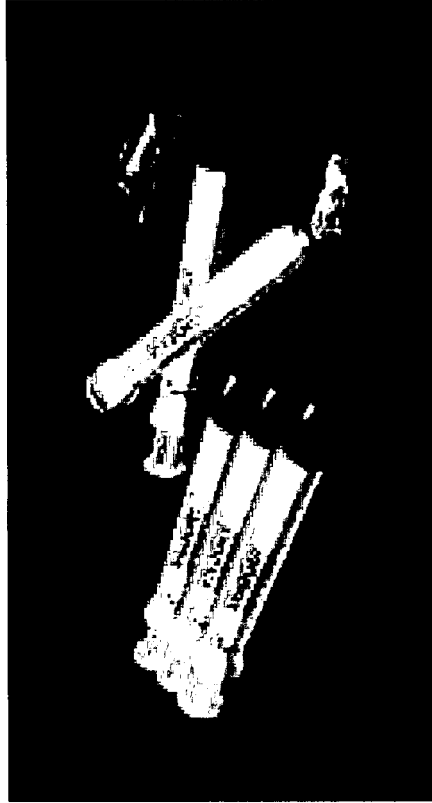


Traditional monovalent drug-receptor interaction.

Dendrimer nanodrug-receptor polyvalent interaction, mimics nature, and results in potentially enhanced activity compared with small molecules.



# VivaGel™ – What is the Product Concept?





## ***VivaGel™ – Excellent Market Opportunities***

### **Developed Countries:**

Market Penetration	Average Frequency of Use per Annum		
	25x	50x	100x
2.5%	US\$365m	US\$730m	US\$1460m
5.0%	US\$725m	US\$1450m	US\$2900m
10.0%	US\$1450m	US\$2900m	US\$5800m

- **Key assumptions**
  - 291m women of reproductive age (15-49) in developed countries
  - Unit sale price circa US\$2
  - Usage rates according to published data

# VivaGel™ – Significant Advantages Over Competitors



Significant Advantages over Other Products in Development	Competitor Category	Key Disadvantages	VivaGel™ Advantages
	Surfactants/ Detergents	<ul style="list-style-type: none"> <li>Ulceration possible; potential incr. risk of HIV infection</li> </ul>	<ul style="list-style-type: none"> <li>No surfactant properties; non-irritant; does not incr. infection risk</li> </ul>
	Sulphated carbohydrates	<ul style="list-style-type: none"> <li>Not active against clinical HIV strains</li> </ul>	<ul style="list-style-type: none"> <li>Highly active against all HIV strains tested</li> </ul>
	Reverse Transcript. Inhibitors and other anti-viral drugs	<ul style="list-style-type: none"> <li>Drug resistance is an issue</li> <li>Primary mode of action requires infection process to have begun</li> <li>Not active against herpes</li> </ul>	<ul style="list-style-type: none"> <li>Very high barrier to development of viral resistance</li> <li>Primary mode of action is prevention of virus attachment</li> <li>Potent activity against herpes</li> </ul>
	Sulphated Polymers	<ul style="list-style-type: none"> <li>High cost of synthesis</li> <li>Poor characterisation of the drug substance likely to present regulatory issues</li> </ul>	<ul style="list-style-type: none"> <li>Excellent drug characteristics:                             <ul style="list-style-type: none"> <li>Low manufacturing costs</li> <li>Stable, well defined entity</li> </ul> </li> </ul>
	Acidity Control Agents	<ul style="list-style-type: none"> <li>Acidity control: sufficient protection as mono-therapy?</li> </ul>	<ul style="list-style-type: none"> <li>Potent activity against HIV and HSV-2 in animal models; non-irritant</li> </ul>