

Starpharma Holdings Limited SPL (\$0.52) S&P/ASX 300 = 4556.2

SPECULATIVE BUY

Analyst: Matthijs Smith

Telephone: 61 3 8803 0150

Big opportunities for small things



Investment Summary

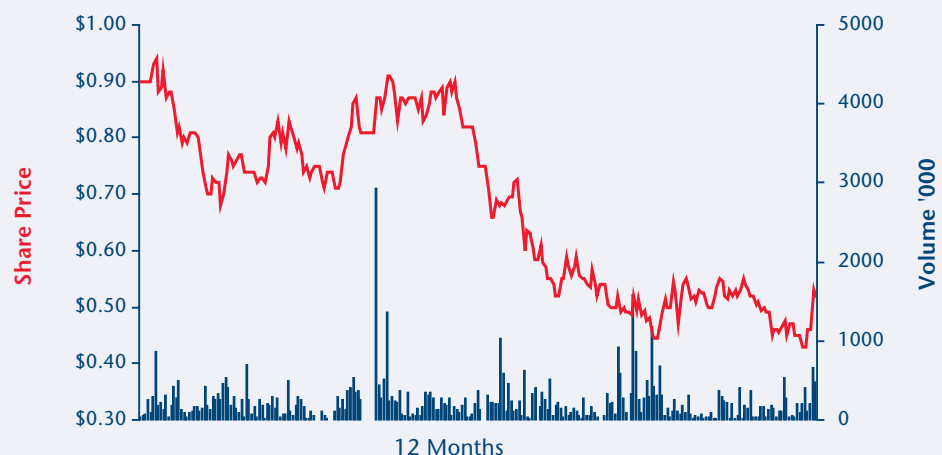
- ▲ SPL provides an attractive speculative investment as a company currently undervalued with a several potential re-rating events on the horizon.
- ▲ SPL is an internationally recognised Australian biotechnology company at the cutting edge of developing nanotechnology based pharmaceutical products (nanopharmaceuticals).
- ▲ SPL's lead product, VivaGel™, is a gel-based formulation of a nanopharmaceutical that is being developed as a microbicide to protect women from HIV and other sexually transmitted infections.
- ▲ This product could receive marketing approval by CY08 and has the potential to generate significant revenue for SPL.
- ▲ SPL also holds a 33% equity position in the US-based private company Dendritic Nanotechnologies Inc (DNT) that is developing dendrimer nanomolecules for a range of non-pharmaceutical applications.
- ▲ We estimate SPL's equity holding in DNT alone may be worth A\$35m-A\$45m (\$0.31-\$0.40 per share) and also provides SPL with exclusive rights to a comprehensive intellectual property portfolio.
- ▲ Taking these existing assets into consideration, our analysis supports a valuation of \$0.90 (MCap \$99.8m) for SPL compared to its current price of \$0.52 (MCap A\$57.8m)
- ▲ We believe there are several potential opportunities for SPL that could result in a significant re-rating including:
 - significant funding opportunities to support development of VivaGel™
 - acquisition of product opportunities through M&A
 - commercial opportunities for VivaGel™ as a condom coating

Company Statistics & Performance

Shares on Issues:
Market Cap.:

111.2m
\$57.8m

Daily Volume: 230,000
52 Week Range: \$0.39 - \$1.00



Starpharma Holdings Limited SPL (\$0.52)



Company Overview

- ▲ SPL is internationally recognised for its leadership in the development of nanotechnology based pharmaceuticals and has received several awards for work in this field.
- ▲ SPL was established to commercialise a nanotechnology platform developed at the Biomolecular Research Institute (Victoria, Australia) which uses highly ordered molecular structures (dendrimers) that have unique properties for the development of new drugs.
- ▲ SPL listed on the ASX in September 2000 as a Pooled Development Fund (PDF) but revoked its PDF status in March 2004 to allow greater flexibility for future growth and expansion opportunities. The company completed a Level 1 ADR listing in the US in January 2005.
- ▲ In March 2003, SPL established a US-based company Dendritic Nanotechnologies Inc (DNT) in collaboration with Donald Tomalia, a leader in the field of dendrimer-based nanotechnologies, and SPL currently holds a 33% equity position in DNT.
- ▲ SPL's lead product, VivaGel™, is being developed as a microbicide to prevent sexual transmission of HIV and herpes simplex virus in women.
- ▲ VivaGel™ has successfully completed a Phase-I clinical trial and been shown to be a powerful blocker of HIV transmission in both cellular and animal models.
- ▲ Following a program of further non-clinical studies, expanded safety and tolerability testing and efficacy studies, SPL anticipates receiving marketing approval for VivaGel™ for the prevention of both HIV and herpes simplex infection in CY08.
- ▲ There is also an opportunity to develop VivaGel™ as a microbicidal coating for condoms which will potentially provide a shorter route to market.
- ▲ SPL has a number of other pharmaceutical applications for dendrimers under development and is actively exploring M&A opportunities to further leverage its technology.
- ▲ SPL has had an impressive track record of attracting grant funding, both locally and off-shore, which has provided over \$7.5m for its development programs to date. In April, the company was awarded a grant of up to \$5.6m under the federal government's P3 scheme.
- ▲ The company is based in Melbourne, Victoria where it employs 34 staff. At 30 June 2005, SPL had \$8.2m in cash reserves with a net cash burn (excluding investments) of \$5.9m for FY05.

Starpharma Holdings Limited SPL (\$0.52)



Nanotechnology For Drug Discovery

- ▲ Nanotechnology encompasses a broad range of different technologies based on precise engineering at an atomic level to generate molecular structures that have unique physical properties and characteristics.
- ▲ SPL is developing a particular class of molecular nanostructures called dendrimers for drug development. Dendrimers are formed by adding successive layers of branching molecules to a central core.
- ▲ Each layer of branching molecules added effectively doubles (or in some cases triples) the number of surface sites that are available for further modification.
- ▲ Different chemical end groups can then be attached to these surface sites to generate a structure that is capable of multiple simultaneous binding events or polyvalence.
- ▲ The net effect of generating such a structure is equivalent to creating a ball of “molecular velcro” with unique and specific binding characteristics. Like velcro, the strength of binding of the dendrimer to its target is enhanced by the simultaneous binding to multiple sites.
- ▲ While it is possible to generate other forms of polyvalent polymers, what makes dendrimers particularly suited for pharmaceutical development is that their synthesis is highly regulated and results in consistent and uniform molecular structures.
- ▲ The synthesis of uniform molecular structures is important for drug development for two reasons:
 - Regulatory approval requires consistency of composition for drugs being tested
 - Cost to manufacture increases dramatically if purification steps are required to generate the consistent composition as is the case with other polymers.
- ▲ The characteristics of dendrimers can be changed for different pharmaceutical applications through a number of different means including:
 - Adding different end groups which bind to different targets to the outside of the molecule
 - Adding mixtures of end groups which causes the dendrimer to simultaneously bind two or more targets
 - Increasing the number of end groups either by adding more “shells” or using branching molecules which add more branches (ie: 2 rather than 3 branches)
 - Increasing the molecular size of the dendrimer by adding more shells to the core group
- ▲ While dendrimers offer an enormous range of possibilities, SPL’s lead bioactive dendrimer, SPL7013, is the first such molecule to enter into clinical development as a potential pharmaceutical product.
- ▲ Furthermore, through the patents held by SPL and through the licensing arrangement with DNT, SPL has a comprehensive intellectual property position covering the use of dendrimers as pharmaceuticals.

Starpharma Holdings Limited SPL (\$0.52)



VivaGel™ – SPL's Lead Product for Prevention of STIs

- ▲ SPL's lead product, VivaGel™, is a gel-based formulation containing a 4th generation dendrimer (ie: 4 layers of branching molecules attached to a central core) called SPL7013 as the active ingredient.
- ▲ SPL7013 is a large molecule (MWt = 16,581Da) which has 32 sites for surface groups. The surface groups in SPL7013 carry a negative charge (ie: the compound is polyanionic) and results in SPL7013 binding tightly to targets with multiple sites that have a positive charge.
- ▲ VivaGel™ is being developed as a microbicide to reduce the risk of sexually transmitted infections (STIs) in women.
- ▲ The initial indications that VivaGel™ is being developed for are the prevention of infection by HIV (the cause of AIDS) and HSV-2 (the cause of genital herpes). However, based on initial laboratory testing, VivaGel™ may also have application for the prevention of other STIs such as Chlamydia and human papilloma virus (HPV).
- ▲ The VivaGel™ product comprises of a gel-based formulation containing SPL7013 delivered directly to the vaginal canal using an applicator prior to intercourse.
- ▲ The polyanionic SPL7013 dendrimer molecules are believed to bind to proteins on the surface of the HIV and HSV-2 particles preventing the attachment of the virus to host cells, a necessary step for a successful infection event.
- ▲ In laboratory experiments, SPL7013 has been shown to potently block infection of cells by all 12 clinical isolates of HIV tested demonstrating its broad activity against this virus.
- ▲ In an primate model for HIV infection, a formulation containing 5% w/w SPL7013 was able to completely block infection by a dose of virus that is several 100x greater than the exposure that would result from intercourse with an infected male partner.
- ▲ The company has completed an initial Phase-1 study in human subjects with VivaGel™ in which the product was well tolerated and demonstrated no significant adverse side-effects. Furthermore, SPL7013 was not detected in the bloodstream indicating that there was no systemic uptake of the topically applied drug.
- ▲ Completion of this Phase-1 trial represents a major milestone as SPL7013 is the first dendrimer nanopharmaceutical to ever be tested in man.
- ▲ The FDA required extensive toxicology testing in animals before allowing the human trials to proceed. In these studies, SPL7013 had no or very low toxicity by intravaginal, oral and intravenous routes.
- ▲ The company plans to undertake additional safety studies in humans prior commencing efficacy studies for the prevention of HIV and HSV-2 infection plus some additional non-clinical safety testing
- ▲ The additional human safety studies are scheduled for completion in Q4 CY06 and additional longer term non-clinical studies are planned. We estimate that the cost of both these programs would be in the order of \$5-6m.

Starpharma Holdings Limited SPL (\$0.52)



- ▲ With the exception of safety profiles in infected patients, the data from these safety studies can be used for development of VivaGel™ for other indications.
- ▲ The design of trials to demonstrate prevention of infection requires a large number of subjects from high-risk populations.
- ▲ Based on clinical trials of other microbicides under development such as BufferGel, we would expect the HIV indication for VivaGel™ to be tested in approximately 3,000 subjects and the HIV indication on up to 2,000 subjects.
- ▲ Based on typical costs for these types of trials of \$10K-\$15K per subject, we would expect the entire clinical program for both HIV and HSV-2 to cost between A\$50m-A\$75m.
- ▲ Given the strong governmental support in the US for the development of microbicides for the prevention of HIV infection, there are a number of grants available to assist with the development of these products.
- ▲ SPL has applied for a number of these grants which, if successful, could provide a significant injection of funds to assist with clinical and non-clinical development of VivaGel™. We understand that the outcome of these grant applications should be known in the near future.
- ▲ Once these programs are completed, SPL will be able to apply for marketing approval without having to undertake additional clinical testing. Assuming these trials are successful, it is anticipated that regulatory approval to sell VivaGel™ will be sought in CY08.

Microbicides – Prevention Is Better Than Treatment

- ▲ While a number of anti-viral therapeutics are being developed to treat people infected with the HIV and HSV-2 viruses, there is an ongoing focus on preventing infection in the first place.
- ▲ In addition to education and attempts to modify behaviour to reduce the risk of infection, there are three approaches to prevent infection from intercourse:
 - condoms
 - vaccines
 - microbicides
- ▲ Despite extensive publicity efforts, use of condoms remains low particularly in sub-Saharan Africa where HIV infection is most prevalent. Furthermore, condom usage is often not under the control of the female who is thus not able to protect herself from possible infection.
- ▲ Due to high rate of change in viruses, there has been little success in developing effective vaccines which stimulate the immune system to inactivate viruses upon infection. Since 1997, over 50 preventative vaccine targets for HIV have been tested in over 70 clinical trials however none have been able to consistently protect against infection.

Starpharma Holdings Limited SPL (\$0.52)



- ▲ Microbicides are chemical agents that inactivate viruses, or other agents of STIs, at the time of intercourse preventing infection. As the administration of these would be controlled by women and would not have the sensory drawbacks of condoms, they offer an attractive first line defence against the spread of HIV and HSV-2 infection.
- ▲ A number of different approaches for microbicial protection are under development for the prevention of HIV infection and other STIs.

Table 1: Microbicides Under Development For Protection Against HIV

Technology	Product	Stage	Comments
Polyanionic Dendrimers	VivaGel™	Phase 1	Human safety data and animal efficacy data
Surfactants	Savvy	Phase 2	Other surfactants have increased HIV infection rates through tissue disruption
Acidity Control	BufferGel	Phase 2	Infection control and contraception however may require additional active ingredients.
Sulphated Carbohydrates	Carraguard	Phase 2	Has shown little activity against clinical isolates in vitro
Sulphated Polymers	PRO2000	Phase 1	High manufacture cost
Reverse Transcriptase Inhibitors	Tenofovir	Phase 2	Selection pressures lead to rapid development of resistance

SOURCE: MDDR Database, Starpharma

- ▲ While a number of microbicides are at a more advanced stage of clinical testing than VivaGel™, many of the other approaches used have limitations in terms of cost or potential effectiveness.

Commercial Opportunities for VivaGel™

HIV PREVENTION

- ▲ HIV infection, which causes AIDS, is a major health burden in both the Western world and in developing countries. Currently it is estimated that 40 million people worldwide are infected with the HIV virus and that 96% are not aware of their infected status.
- ▲ Worldwide, more than 90% of all HIV infections are the result of heterosexual intercourse and women account for approximately 50% of the 40 million adults infected with HIV worldwide. Approximately 7,000 women are newly affected with HIV each day.
- ▲ Many women, particularly in the developing world, are unable to insist on mutual monogamy or negotiate condom use, especially in long-term relationships, and are thus at high risk of being infected with HIV.

Starpharma Holdings Limited SPL (\$0.52)



- ▲ Within the US, there are over 1 million people living with HIV of which over 200,000 are women. The majority (65%) of women contract HIV through heterosexual contact.
- ▲ Given the low usage of condoms and lack of success in developing an anti-HIV vaccine, microbicides that protect women from infection during intercourse are seen as one of the most promising approaches to reduce infection rates.
- ▲ The largest volume market for VivaGel™ for the prevention of HIV infection will be in the developing countries such as sub-Saharan Africa, Thailand, and South and Central America. However, as the product is also being developed for other indications such as prevention of HSV-2 infection, the more developed countries will represent an equally significant commercial opportunity.
- ▲ While direct sales of VivaGel™ in these areas will be challenging due to their low socio-economic conditions, it is likely that a product able to significantly reduce HIV transmission rates would be purchased and distributed by international health organisations.
- ▲ These organisations would not only be high volume customers but would provide distribution and education to ensure that the product was readily available and used.
- ▲ The budgets being allocated by these organisations for HIV prevention are significant. In 2005, the US government organisation USAID announced a 5-year US\$15 billion program to combat AIDS while UNAIDS was estimating total expenditures of US\$8.9 billion in 2006 and US\$10 billion in 2007.
- ▲ The success of VivaGel™ in this market will depend on a number of factors:
 - clear demonstration of infection prevention with an acceptable safety profile
 - advantages over other microbicides (cost, stability, efficacy)
 - education and cultural acceptance of the product
 - relationships with key health organisations

GENITAL HERPES PREVENTION

- ▲ Herpes Simplex Virus Type-2 (HSV-2) is the most common cause of ulcerative genital disease in the United States.
- ▲ It is estimated that HSV-2 affects approximately 22% of the US adult population. In other developed countries the prevalence of HSV-2 is between 15-25% of the adult population.
- ▲ Without intervention, the prevalence of HSV-2 infection among individuals aged 15-39 years in the US is projected to increase to 39% of men and 49% of women by 2025.
- ▲ Up to 50% of HSV-2 infected individuals are unaware of their infected status and are asymptomatic which has resulted in very high transmission rates in the population.
- ▲ Like HIV, infection with HSV-2 is irreversible. Individuals who are symptomatic may experience recurrent genital ulceration, neonatal herpes simplex virus infection, anxiety and depression.
- ▲ VivaGel™ is being developed for prevention of HSV-2 infection and has shown promising results in animal models for preventing HSV-2 infection.

Starpharma Holdings Limited SPL (\$0.52)



- ▲ Given the high prevalence of HSV-2 in developed countries, this is likely to generate a greater opportunity in these markets.
- ▲ In 2002, it is estimated that in the more developed countries there were 291 million women of reproductive age (15-49 years) of which 115 million (40%) were unmarried. As VivaGel™ would be used regularly by users, even capturing a small percentage of this target market would result in significant unit sales.

Table 2: Potential Annual Unit Sales for VivaGel™ in the Developed Countries

Market Penetration	Average Frequency of Use Per Annum		
	10x pa	50x pa	100x pa
1.0%	29m	145m	290m
2.5%	73m	365m	730m
5.0%	145m	725m	1,450m

SOURCE: Paterson Estimates

CONTRACEPTION AND STI PREVENTION

- ▲ Additional market penetration for VivaGel™ may be achievable as the effectiveness of the product for other purposes is demonstrated.
- ▲ If VivaGel™ was able to provide both protection against a broad range of common STIs and provide contraception, it could become an attractive product for sexually active women.
- ▲ SPL is currently evaluating the potential of the product for other STI indications including Chlamydia and human papilloma virus (HPV), the lead cause of cervical cancer.
- ▲ In addition, Starpharma has established a collaboration with the US-based company ReProtect Inc to develop a product that combines BufferGel with SPL7013 which would provide dual action against viral infection as well as contraception.
- ▲ This collaboration is being funded by a \$US5.4m grant from the National Institute of Allergy and Infectious Diseases (NIAID).

CONDOM COATINGS

- ▲ There is also a potentially shorter route to market for VivaGel™ as a coating in the premium condom market.
- ▲ The most common coating in premium condoms is a surfactant called nonoxynol-9 (N-9) which is supposed to provide spermicidal protection as well as act as a microbicide.
- ▲ Recent studies have shown that surfactants such as N-9 can cause localised irritation in the vaginal canal that result in an increase, rather than a decrease, in the rate of infection by HIV and other viruses.
- ▲ SPL is actively exploring the use of VivaGel™ as a microbicidal coating for their premium end condoms with a number of potential commercial partners.
- ▲ As this use of VivaGel™ may have less onerous regulatory approval process, it could offer a shorter route with market entry potentially early as 2H CY07.

Starpharma Holdings Limited SPL (\$0.52)



Other Applications of Dendrimers are in Discovery

- ▲ SPL has a number of earlier discovery-based programs primarily through collaborative research programs with other entities.
- ▲ All of these programs are at an early stage and are not at a stage that lead candidates for entry into preclinical development have been identified.

GPCR AGONISTS

- ▲ Dimerix Biosciences, an unlisted Australian biotechnology company in which SPL has a 22% equity holding, is using SPL's dendrimer technology to develop multivalent GPCR agonists.
- ▲ As dendrimers are likely to have enhanced affinity for these well-validated targets, they may provide an avenue for developing more potent drugs or drugs with longer half-lives.

MODIFICATION OF EXISTING DRUGS

- ▲ Through a collaboration with Industrial Research Limited (NZ), SPL is developing carbohydrate functionalised dendrimers (glycodendrimers) for use as therapeutics or as modifiers for existing therapeutics to improve their dosing efficiency.
- ▲ This joint venture is being supported by a NZ\$945K grant from the Australia New Zealand Biotechnology Partnership Fund and a further NZ\$1m from IRL.

OTHER OPPORTUNITIES

- ▲ The company also has early stage development collaborations for the use of dendrimers for diabetes (ChemGenex Inc.), biodefense (Anadis Ltd) and radiopharmaceuticals.
- ▲ As all of these opportunities are at an early stage, the majority of the technology value in SPL currently resides with the commercial potential for SPL7013 and the VivaGel™ product as well as the company's strong intellectual property position on the use of dendrimers for pharmaceutical applications.
- ▲ The company has indicated that it is actively exploring opportunities to enhance its product pipeline and technology base through technology and/or company acquisitions.
- ▲ We believe this would be a very positive move and would improve SPL's current risk profile from the company's reliance on products based on different applications of a single compound, SPL7013.

Starpharma Holdings Limited SPL (\$0.52)



DNT Is A Valuable and Strategic Asset

- ▲ We consider SPL's 33% holding in the Michigan based company Dendritic Nanotechnologies Inc (DNT) to be a very significant asset for the company which provides:
 - access to an unencumbered intellectual property portfolio that dominates the use of dendrimers for pharmaceutical applications
 - exposure to non-pharmaceutical applications for dendrimers which are being developed by DNT
 - an investment in a company with excellent growth prospects
- ▲ DNT was established in March 2003 between Starpharma and Donald Tomalia, a pioneer in the field of dendrimer based nanotechnology who previously worked for The Dow Chemical Company (DOW).
- ▲ In January 2005, DNT and Starpharma signed a deal with DOW which resulted in DOW assigning its entire intellectual property portfolio in the field of dendrimers (196 patents comprising 41 patent families) to DNT in exchange for an equity position.
- ▲ Following this transaction and a further cash investment of US\$1m (AU\$1.3m), SPL retained a 33% equity stake in DNT. To date, SPL has invested a total of approximately A\$5.2m in DNT.
- ▲ Under the terms of the DNT arrangement, SPL has exclusive commercialisation rights to DNT's existing and future dendrimer technology for dendrimer-based nanopharmaceuticals.
- ▲ This provides SPL with a significant competitive advantage in the field. Following a review, the leading US patent attorney firm Foley & Lardner stated that many of the relevant patents for pharmaceutical applications of dendrimers, to which SPL has an exclusive license, are under the control of DNT.
- ▲ DNT is focussing its development efforts on both optimising dendrimer technology and on non-pharmaceutical applications for dendrimers including diagnostics, imaging agents, transfection agents, coatings and materials, electronics and photonics.
- ▲ The company has already licensed two products which are generating royalty income:
 - cardiac market diagnostic licensed to Dade Behring Inc (USA)
 - gene transfection agent licensed to Quiagen GmbH (Germany)
- ▲ DNT also has established business agreements with a number of leading companies (Pfizer Inc., Dharmacon Research Inc, Johnson & Johnson, Sigma Adlrlich, General Dynamics Corporation), as well as a research contract with The Army Research Laboratory for the detection of Anthrax.

Starpharma Holdings Limited SPL (\$0.52)



- ▲ In May 2005, DNT announced the development of a new synthetic methodology for generating dendrimers named Priostar™. Dendrimers produced using the Priostar™ methodology have significant advantages which open up a number of new commercial opportunities:
 - significantly cheaper and faster to produce (orders of magnitude)
 - readily scaleable manufacture
 - dendrimers generated have significantly greater thermal stability
 - larger number of surface groups improving surface functionality
- ▲ DNT is currently developing a number of products which have the potential for licensing in the next two years including:
 - Imaging/Contrast agents for MRI imaging
 - Transfection agents including the delivery of siRNAs
 - Drug delivery using dendrimers to encapsulate a range of cancer drugs
- ▲ The company also intends to expand its business by licensing and supplying dendrimers to business partners for narrowly defined commercial applications.

SPL's Equity Stake in DNT May Be Worth up to A\$45m

- ▲ Clearly the most valuable benefit of SPL's partnership with DNT is its exclusive right to DNT's intellectual property portfolio that provides significant protection for the development of dendrimers for pharmaceutical applications.
- ▲ As DNT is a private company, there is limited information available in the public domain to assist with valuation estimates. However, listed companies on Nasdaq developing nanomaterials for various applications currently have market capitalisations between US\$80m-US\$190m.

Table 3: Market Caps of Listed US Nanomaterials Companies

Company	MCap (US\$m)	Focus
Orthovita	\$190m	Biomaterials for bone remodelling
Altair	\$168m	Proprietary technology for nanocrystalline materials
Nanogen	\$157m	Molecular diagnostics and microarrays
Nanophase	\$106	Nanocrystalline materials
Lumera	\$81m	Polymers with specific optimised properties
Isonics	\$79m	Atomic replacement technology

SOURCE: Nanovip.com, Yahoo.com

- ▲ To date, DNT has received US\$9.5m in direct equity investments and over US\$3.5m in research contracts and grants.
- ▲ While comparative valuations are always subjective, we believe that DNT would represent a competitive offering to investors and attract a comparable valuation in the public markets.

Starpharma Holdings Limited SPL (\$0.52)



- ▲ We base this assessment on the fact that DNT provides:
 - A comprehensive intellectual property position in the field of dendrimers for a wide variety of different applications in different industries
 - Proprietary and unique technology that dramatically reduces to cost of dendrimers opening up their application to new market opportunities
 - Two licensed products already generating royalty revenues with additional products for licensing expected during the next two years
 - Established corporate partnerships with industry leaders (The Dow Chemical Company, Pfizer, Sigma-Aldrich)
- ▲ In light of this and the current market capitalisations of nanomaterials companies in the US, we believe a reasonable initial valuation estimate for DNT would be in the order of US\$80m-US\$100m.
- ▲ On this basis, we would estimate that the asset value of SPL's equity stake in DNT would be approximately A\$35m-A\$45m.
- ▲ Although it would be difficult to realise this value while DNT remains private, SPL's equity stake is clearly a valuable asset that needs to be factored into its underlying valuation.

Board And Management

- ▲ SPL is headed by John Raff (CEO) who was the co-founder of a technology-based seed company and has been involved in the founding and investment in a number of start-up technology companies.
- ▲ The company's management team is focussed on drug development and discovery and includes Tim Grogan (Commercial Development & Licensing), Tom McCarthy (Drug Development), Jeremy Paull (Regulatory Affairs), Guy Krippner (Drug Discovery) and Ben Rogers (Company Secretary).
- ▲ The company has recently strengthened its management team with two appointments that reflect a greater focus on expansion opportunities and commercialisation. Jackie Fairley (ex-CEO of Cerylid Biosciences) was appointed to a newly created position of COO in March 2005 and Paul Barrett (international marketing and business development) was recruited to add depth to the company's business development capability July 2005.
- ▲ We view these appointments as a positive sign of SPL's intention to seek transactions to leverage the company's dendrimer technology platform and rapidly expand its product pipeline as well as focus on the realisation of commercial outcomes.
- ▲ SPL's Board is chaired by Peter Bartels (ex-CEO and MD of both Coles Myer and Fosters). SPL's other Directors are Peter Colman (developer of the influenza drug Relenza), Ross Dobinson (investment banking), Leon Gorr (legal and technology licensing), Peter Jenkins (medical clinician) and John Raff (CEO).

Starpharma Holdings Limited SPL (\$0.52)



Corporate Structure & Shareholding

- ▲ SPL was originally established as a pooled development fund (PDF) with 4 100%-owned subsidiary companies: Starpharma Pty Ltd, Angiostar Pty Ltd, ViralStar Pty Ltd and Preclin Pty Ltd.
- ▲ While this structure still exists, since revoking its status as a PDF, the parent company was renamed Starpharma Holdings Ltd and all of the operations are through Starpharma Pty Ltd with the other 3 companies currently non-operational.
- ▲ SPL has equity holding in two private companies: 33% in Dendritic Nanotechnologies (Michigan, USA) and 22% in Dimerix Bioscience (WA, Australia).
- ▲ SPL has 111.2m ordinary shares on issue with none held in escrow. Of these 5.7% are traded in the US under the ticker SPHRY via a Level 1 ADR Program that was established in January 2005.
- ▲ Currently there are 2 significant shareholders (Acorn Capital 9.3% and Peter Colman 5.4%) with the top 20 shareholders holding 50% of the stock. Directors of SPL currently hold approximately 20% of the ordinary shares on issue.
- ▲ The average daily turnover for SPL is 230,000 shares.

Valuation

- ▲ Our analysis of the current assets of SPL support a price of \$0.90, a significant premium to the company's current share price of \$0.52.

Table 4: Breakdown of Valuation of Assets of SPL

Asset	Basis of Valuation	Valuation (\$A)	Per Share
Equity in DNT	Comparable Companies	\$40m	\$0.360
VivaGel™	Risk Adjusted DCF	\$44.8m	\$0.403
Other technology & IP	Estimate	\$15m	\$0.135
	Total	\$99.8m	\$0.898

SOURCE: Paterson estimates

- ▲ Our estimate of the value of SPL's equity holding in DNT is based on listed US companies developing nanomaterials for various applications. The valuation of these companies range between US\$80m and US\$190m. We have used a valuation of US\$90m in our calculation.
- ▲ Our DCF calculation is based on published estimates of women between the ages of 15 and 49 years of age in developed countries and developing countries with high incidence of HIV.
- ▲ We have assumed that VivaGel™ has a 50% chance of getting to market and that SPL will receive a net profit (after sales & marketing expenses) of \$0.75 per unit sold.
- ▲ We have also assumed VivaGel™ eventually achieves 1.5% market for eligible women in the more developed world (approximately 4 million) and 1% in relevant developing countries (approximately 5 million).

Starpharma Holdings Limited SPL (\$0.52)



Several Opportunities for Re-Rating

- ▲ We believe that SPL is currently undervalued based on the potential value of its equity holding in DNT, a risk-adjusted valuation of the VivaGel™ product and the value of its comprehensive IP position covering pharmaceutical applications of dendrimers.
- ▲ While the current lack of depth in the company's product pipeline may be one of the factors which has impacted on SPL's current valuation, we believe that there are a number of potential opportunities that could trigger a significant re-rating of the stock in the near term.
 - grant applications from public organisations may provide significant funds to assist with the development of VivaGel™. The outcome of these applications is expected to be known in the near future.
 - merger or acquisition of another company that enhances the product pipeline or uses SPL's dendrimer technology to rapidly develop new products.
 - establishing a relationship with one or more commercial partners for the use of VivaGel™ as a condom coating which could provide revenues in CY07.
 - a disclosed financing round for DNT that provides a market-based valuation on SPL's equity holding of DNT.
- ▲ We believe that one or more of these possible re-rating events could occur over the next 6 months. Combined with our view that SPL is currently undervalued, we see that the company provides a very attractive speculative investment opportunity.

Outlook & Recommendation

- ▲ We believe that SPL offers speculative investors both a short term and long term investment opportunity in the biotechnology space.
- ▲ With the company currently undervalued and a number of re-rating opportunities in the pipeline, investors are likely to benefit in the short term as well as from value growth as the company's VivaGel™ product gets closer to market.
- ▲ We view the recent appointments of a COO and an internationally experienced Business Development Manager as positive for the company and reinforce the focus of the company to realise near term commercial opportunities as well as more rapidly build its pipeline through acquisition opportunities.
- ▲ Our view is that the current focus on different applications of a single product combined with the development time for that product may be a contributing factor to SPL's current market valuation.
- ▲ In light of this, we would expect a potential acquisition would have a positive impact on SPL both from a risk-mitigation standpoint as well as from the potential commercial value of any product acquired.
- ▲ The data on VivaGel™ to date has been very positive and clearly supports its development as a promising and competitive microbicide for the prevention of STIs.
- ▲ We also see good commercial opportunities for this product both in developing countries, through international health organisations, and in developed countries.
- ▲ In view of this, we recommend SPL as a quality speculative investment opportunity that offers excellent growth potential as the company develops and complements its existing product opportunities.

Research

Rob Brierley - Head of Research	Phone: (+61 8) 9263 1239	Email: rbrierley@psl.com.au
Robert Gee - Industrial Analyst	Phone: (+61 8) 9263 1637	Email: rgee@psl.com.au
Simon Oaten - Oil & Gas Analyst	Phone: (+61 3) 8803 0144	Email: soaten@psl.com.au
David Johnson - Oil & Gas Analyst	Phone: (+61 2) 8238 6214	Email: djohnson@psl.com.au
Benn Skender - Industrial Analyst	Phone: (+61 8) 9263 1610	Email: bskender@psl.com.au
Matthijs Smith - Industrial Analyst	Phone: (+61 3) 8803 0146	Email: msmith@psl.com.au
Rebecca Thompson - Property Analyst	Phone: (+61 2) 8238 6245	Email: rthompson@psl.com.au
Josh Welch - Resources Analyst	Phone: (+61 8) 9263 1668	Email: jwelch@psl.com.au
Russell Wright - Industrial Analyst	Phone: (+61 2) 8238 6219	Email: rwright@psl.com.au
Julia Griffiths - Assistant Analyst	Phone: (+61 8) 9263 1664	Email: jgriffiths@psl.com.au

Institutional Dealing

Phil Schofield	Phone: (+61 2) 8238 6223	Email: pschofield@psl.com.au
Dan Bahen	Phone: (+61 2) 8238 6237	Email: dbahen@psl.com.au
Paul Doherty	Phone: (+61 3) 8803 0108	Email: pdoherty@psl.com.au
Jason Lal	Phone: (+61 2) 8238 6276	Email: jlal@psl.com.au
Trevor Pike	Phone: (+61 3) 8803 0110	Email: tpike@psl.com.au
Peter Talbot	Phone: (+61 2) 8238 6243	Email: ptalbot@psl.com.au
Andrew Frazer	Phone: (+61 8) 9263 1241	Email: afrazer@psl.com.au
Sandy Wylie	Phone: (+61 8) 9263 1232	Email: swylie@psl.com.au

Important Notice: Copyright 2005. The contents contained in this report are owned by Patersons Securities Limited ("Patersons") and are protected by the Copyright Act 1968 and the copyright laws of other countries. The material contained in this report may not be copied, reproduced, republished, posted, transmitted or distributed in any way without prior written permission from Patersons. Modification of the materials or use of the materials for any other purpose is a violation of the copyrights and other proprietary rights of Patersons.

Disclaimer: Patersons believes that the information or advice (including any financial product advice) contained in this report has been obtained from sources that are accurate at the time of issue, but it has not independently checked or verified that information and as such does not warrant its accuracy or reliability. Except to the extent that liability cannot be excluded, Patersons accepts no liability or responsibility for any direct or indirect loss or damage caused by any error in or omission from this report. You should make and rely on your own independent inquiries.

If not specifically disclosed otherwise, investors should assume that Patersons is seeking or will seek corporate finance business from the companies disclosed in this report.

Warning: This report is intended to provide general securities advice, and does not purport to make any recommendation that any securities transaction is appropriate to your particular investment objectives, financial situation or particular needs. Prior to making any investment decision, you should assess, or seek advice from your adviser, on whether any relevant part of this report is appropriate to your individual financial circumstances and investment objectives.

Disclosure: Patersons, its director and/or employees may earn brokerage, fees, commissions and other benefits as a result of a transaction arising from any advice mentioned in this report. Patersons as principal, its directors and/or employees and their associates may hold securities in the companies the subject of this report, as at the date of publication. These interests did not influence Patersons in giving the advice contained in this report. Details of any interests may be obtained from your adviser. Patersons as principal, its directors and/or employees and their associates may trade in these securities in a manner which may be contrary to recommendations given by an authorised representative of Patersons to clients. They may sell shares the subject of a general "Buy" recommendation, or buy shares the subject of a general "Sell" recommendation.

Stock Recommendations: Our recommendations are based on a 3 month (short term) and 12 month (long term) investment objective, relative to the S&P 300 benchmark. Patersons uses the following short term rating system: BUY [Stock is undervalued on all investment criteria, and likely to exceed the performance of the ASX/S&P 300 Accumulation Index by more than 7.5% in the next three months.] HOLD [Sound investment fundamentals but lacks a catalyst in the next three months.] SELL [Stock is overvalued and likely to underperform the ASX/S&P 300 Accumulation Index by at least 7.5% in the next three months.] SPECULATIVE BUY [Stock may not be of investment grade due to low market capitalisation, high levels of debt or significant risks in the business model, but appears attractively priced.] Patersons uses the following long term rating system: BUY [Stock is expected to exceed the performance of the ASX/S&P 300 Accumulation Index by at least 7.5% in the next twelve months.] HOLD [Stock is expected to perform within -7.5%/+7.5% of the ASX/S&P 300 Accumulation Index in the next twelve months.] SELL [Stock is expected to underperform against the ASX/S&P 300 Accumulation index by at least 7.5% in the next twelve months.]

This Document is not to be passed on to any third party without our prior written consent.

Patersons Securities Limited ABN 69 008 896 311 AFSL No. 239 052
Participant of ASX Group
Securities & Derivatives Industry Association Principal Member
Financial Planning Association Principal Member



Western Australia

Perth - Head Office: Level 23, Exchange Plaza, 2 The Esplanade, Perth, Western Australia 6000
Ph: (+61 8) 9263 1111 Fax: (+61 8) 9325 6452 Email: patersons@psl.com.au

West Perth Office: Level 2, 34 Colin Street, West Perth Western Australia 6005
Ph: (+61 8) 9482 0900 Fax: (+61 8) 9482 0999 Email: patersons@psl.com.au

Albany Office: Level 2, Middleton Centre, 184 Aberdeen Street, Albany, Western Australia 6330
Ph: (+61 8) 9842 4700 Fax: (+61 8) 9841 4211 Email: albany@psl.com.au

Bunbury Office: Arrio Building, 7 Stirling Street, Bunbury, Western Australia 6230
Ph: (+61 8) 9791 7133 Fax: (+61 8) 9721 2599 Email: bunbury@psl.com.au

Busselton Office: Suite 1, 72 Duchess Street, Busselton Western Australia 6280
Ph: (+61 8) 9754 0700 Fax: (+61 8) 9754 4333 Email: busselton@psl.com.au

Kalgoorlie Office: 63 Hannan Street, Kalgoorlie, Western Australia 6430
Ph: (+61 8) 9021 1422 Fax: (+61 8) 9021 8133 Email: kalgoorlie@psl.com.au

Mandurah Office: Suite 9, 55 Mandurah Terrace, Mandurah, Western Australia 6210
Ph: (+61 8) 9534 8422 Fax: (+61 8) 9534 8466 Email: mandurah@psl.com.au

New South Wales

Sydney Office: Level 27, 264 George Street, Sydney New South Wales 2000
Ph: (+61 2) 8238 6222 Fax: (+61 2) 8238 6266 Email: sydney@psl.com.au

Victoria

Melbourne Office: Level 18, 90 Collins Street, Melbourne Victoria 3000
Ph: (+61 3) 8803 0100 Fax: (+61 3) 8803 0199 Email: melbourne@psl.com.au

ACT

Canberra Office: Level 4, 53 Blackall Street, Barton ACT 2600
Ph: (+61 2) 6120 2222 Fax: (+61 2) 6273 3433 Email: canberra@psl.com.au