



## Starpharma's VivaGel™ in Top 5 Nanotech Breakthroughs of 2004

**Melbourne (Australia), 24 December 2004:** Starpharma Holdings Limited (ASX:SPL) announced today that its successful human trial of VivaGel™, its polyvalent microbicide for HIV prevention, has been named one of the Top 5 Nanotech Breakthroughs of 2004.

This accolade, announced in the December 2004 issue of the US publication, *Forbes/Wolfe Nanotech Report*, comes just days after Starpharma announced the results of the first Phase 1 clinical trial of VivaGel™, which showed that the product is safe and well tolerated by subjects when administered once daily for seven consecutive days.

VivaGel™ is being developed as a topical microbicide that has the potential to prevent the transmission of HIV and other STDs when applied to the vagina prior to sexual intercourse. It is the first drug product in the world based upon nanoscale molecules called dendrimers to enter human trials under the US Food and Drug Administration (FDA) Regulations.

The *Forbes/Wolfe Nanotech Report* is recognised as one of the leading sources of nanotechnology industry news and information. The Forbes/Wolfe article points out that in addition to representing a new form of HIV prevention, VivaGel™ also offers early hope that nanoscale dendrimers could be developed as a new drug delivery platform. In September 2004, the *Forbes/Wolfe Nanotech Report* named dendrimer technology as one of the five nanotechnologies that could change the world. Starpharma CEO, Dr John Raff, said, "Inclusion in this Top 5 list confirms the status of VivaGel™ as a cutting edge and leading product in the nanomedicine field and in the nanotechnology development arena in general."

Other breakthroughs in the Forbes/Wolfe Top 5 list were:

- The world's smallest nanotube transistor, which will enable the development of faster computers (*Infineon*);
- A mechanism capable of reading the spin of a single electron, which could allow scientists to image the internal structure of molecules and eventually lead to the ability to store information in the spin of single electron (*IBM*);
- Breaking the 1 angstrom (0.1 nanometre) imaging barrier, which will allow improved electron microscopy imaging (*FEI Company*); and
- Clothing the toxicity of fullerenes to prevent clumping of these molecules into toxic matter (*Rice University & Georgia Institute of Technology*).

In addition to the VivaGel™ program, Starpharma is developing dendrimers for other polyvalent pharmaceutical applications. The Company's proprietary dendrimer platform technology provides unique benefits for the design and synthesis of a very broad range of compounds suited to life sciences applications, and in particular as pharmaceuticals. The consistent architectural diversity, 'bio-friendly' properties, cost of production and reproducibility characteristics provide unique opportunities for the Company to develop and exploit the technology for high value applications as pharmaceuticals.

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**About Starpharma:**

Starpharma Holdings Limited (ASX:SPL) is focused on the development and application of dendrimer nanotechnologies as drugs against major diseases. VivaGel™ is a topical microbicide gel product that has been developed for women as a preventative against the sexual transmission of HIV. It is also active in animal studies for the prevention of other sexually transmitted diseases including genital herpes and Chlamydia. SPL also has an equity interest in a US based company – Dendritic Nanotechnologies, Inc. (DNT) – established with the US pioneer of dendrimer nanotechnology Dr Donald A. Tomalia.

**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.

**For further information, please contact**

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