

In this edition...

Pattern recognition is a basic skill for all investors so when Japanese pharmaceutical firm Takeda recently announced yet another deal it was time to dig a little deeper. After buying Millennium Pharmaceuticals in April, the company announced a US\$150 million licensing deal with RNAi firm Alnylam Pharmaceuticals.

We also investigate progress being made at two very resilient Melbourne firms, Optiscan Imaging and Starpharma. Both companies illustrate how the path to market for promising technologies can be slower than expected, with adoption rates a key issue for Optiscan's/Hoya's flexible confocal endomicroscope.

The editors

Companies covered: OIL, SPL

	Bioshares Portfolio
Year 1 (May '01 - May '02)	21.2%
Year 2 (May '02 - May '03)	-9.4%
Year 3 (May '03 - May '04)	70.0%
Year 4 (May '04 - May '05)	-16.3%
Year 5 (May '05 - May '06)	77.8%
Year 6 (May '06 - May '07)	17.3%
Year 7 (May '07 - May '08)	-36%
Year 8 (May '08 - current)	-2%
Cumulative Gain	103%
Av Annual Gain (7 yrs)	17.8%

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Bioshares

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Delivering independent investment research to investors on Australian biotech, pharma and healthcare companies.

Extract from *Bioshares* –

Starpharma's International Investor Appeal

A novel chemistry platform can generate a myriad of uses and commercial opportunities. And so it is now with Starpharma Holdings' dendrimer chemistry scaffolding asset that continues to receive wider interest for a defined chemistry scaffold that can be precisely constructed and manipulated to deliver a seemingly limitless number of functional uses.

Since the beginning of 2007, Starpharma has signed development agreements for its technology with:

- **EMD Biosciences** (siRNA and DNA transfection)
- Undisclosed partner (condom coating)
- **SSL International** (condom coating for Durex condoms)
- **Steifel Laboratories** (improved dermal treatments)
- **Unilever** (dendrimers as imaging agents to assess food structure)

This accelerated interest can likely be attributed to the progress Starpharma is making with its lead dendrimer program, Vivagel, a microbicide being commercialised for the prevention of sexually transmitted diseases.

Vivagel

Starpharma has now completed three safety studies of Vivagel in 134 people with positive results. A fourth expanded safety study is continuing and once completed the company should start two major population-based efficacy studies using Vivagel to prevent HIV (in around 4000 people) and the prevention of genital herpes (in up to 2000 people). These trials will take at least two years to complete and are being funded with more than US\$26 million of grants from the US National Institutes of Health.

Closer to market however will be the application of Vivagel as a condom coating. Following safety studies, larger expanded efficacy studies will not be required, only *in vitro* (laboratory) efficacy data will be required, much of which has already been received. It is estimated this product could be in commercial markets within 12-18 months. *Bioshares* estimates potential royalties at \$20 million a year from this application.

Commercial Developments

In April this year, Starpharma's partner launched the first commercial dendrimer product which is based on the company's Priostar cell transfection agents. Called 'Nanojuice Transfection Kit', the kit will allow researchers to transfect living cells with DNA. The follow-on product will be similar although will allow the transfection of cells with siRNA.

The real upside with this technology is if it can be applied to siRNA into cells *in vivo*, which is a massive challenge for siRNA drug developers. Starpharma retains rights to *in vivo* applications.

Clinical Developments

The utility of Vivagel in killing pathogens responsible for sexually transmitted diseases has been widened with recent data showing Vivagel is effective against the human papillomavirus (HPV). HPV is linked to the onset of cervical cancer for which the recently launched Gardasil vaccine seeks to prevent. In laboratory tests the compound was shown to be effective against strains that cause genital warts and cervical cancer that are not included through Gardasil vaccination (HPV-5, HPV-6 and HPV-45).

That Vivagel has shown efficacy in laboratory tests against HPV strains, HIV and the herpes virus (HSV-2) increases the appeal of this product for use as a broad spectrum antimicrobicide. Vivagel has also shown to have contraceptive benefits. The lack of an effective microbicide is a key driver for this product.

Summary

Starpharma Holdings is a unique biotech investment consideration with its appeal increasing internationally. Around 25% of the company's shares are now held in the USA with interest growing in the company in Europe and Asia as well. The widespread utility of this technology is now being investigated by several commercial groups giving early validation of the technology's potential.

Bioshares recommendation: **Speculative Buy Class A**

Bioshares

How Bioshares Rates Stocks

For the purpose of valuation, *Bioshares* divides biotech stocks into two categories. The first group are stocks with existing positive cash flows or close to producing positive cash flows. The second group are stocks without near term positive cash flows, history of losses, or at early stages of commercialisation. In this second group, which are essentially speculative propositions, *Bioshares* grades them according to relative risk within that group, to better reflect the very large spread of risk within those stocks.

Group A

Stocks with existing positive cash flows or close to producing positive cash flows.

- Buy** CMP is 20% < Fair Value
 - Accumulate** CMP is 10% < Fair Value
 - Hold** Value = CMP
 - Lighten** CMP is 10% > Fair Value
 - Sell** CMP is 20% > Fair Value
- (CMP–Current Market Price)

Group B

Stocks without near term positive cash flows, history of losses, or at early stages commercialisation.

Speculative Buy – Class A

These stocks will have more than one technology, product or investment in development, with perhaps those same technologies offering multiple opportunities. These features, coupled to the presence of alliances, partnerships and scientific advisory boards, indicate the stock is relative less risky than other biotech stocks.

Speculative Buy – Class B

These stocks may have more than one product or opportunity, and may even be close to market. However, they are likely to be lacking in several key areas. For example, their cash position is weak, or management or board may need strengthening.

Speculative Buy – Class C

These stocks generally have one product in development and lack many external validation features.

Speculative Hold – Class A or B or C

Sell

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