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In this edition...
Well what a week! Metabolic delivered a knockout blow to investors and has put a pause on the biotech sector's strong run. Further pivotal study results are expected in coming weeks from Avexa, Progen and ChemGenex that may restore confidence if the outcomes are positive.

As part of the biotechs sector's ever changing landscape, we are now observing biotechs renegotiating licensing arrangements with partners. We take a look at developments there and consider the motives behind the trend.

We also take a good look at Neurodiscovery, a biotech company that is specialising in developing drugs to treat neuropathic pain.

The editors
Companies covered: MBP, NDL, PRR

	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 (from 5 May '06)	16.9%
Cumulative Gain	**225%**
Average Annual Gain	**26.7%**

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Bioshares

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

Strategies and Issues

Australian Biotechs Renegotiate License Arrangements

While not an emerging trend, a greater than average number of license variations and re-negotiations of biotech deals have occurred recently. The motives for re-negotiating these deals vary, but in the main, they are more than likely to benefit the Australian listed company that has moved to gain broader rights over a technology or product.

Four recent agreements that have been re-written include those between **Prima Biomed** and **Biomira** (Canada), **Avexa** and **Shire Pharmaceuticals** (UK), **Progen Industries** and **Medigen Biotechnology Corp** (MBC) (Taiwan) and **Neurodiscovery** and **Ampika** (UK). The histories of these agreements are itemised in tables on pages 2 and 3.

Two older agreements that were re-written also worth noting are those between **Starpharma** and the **Biomolecular Research Institute** (BRI) (Melbourne), and **Peplin** and **Allergan** (USA).

In some cases, the Australian listed company (or its subsidiary) has re-written the deal to gain or regain world-wide commercialisation rights. This is true for Avexa, Prima, NeuroDiscovery and Peplin. In other cases, the re-negotiation has centred on the cancellation of royalty obligations, either to the licensor, as is the case with Starpharma to another a third party, as is the case with Progen and MBC.

Why re-negotiate license agreements?

One major reason for re-negotiating a license agreement is to gain world-wide marketing rights of full indication rights to a compound or technology. A second reason is to either buy-out or reduce further up-stream royalty obligations. Although these two actions are often separate, they both support a company's efforts to capture as much as possible of the economic value of a technology and the products that stem from it.

Potential for increased income returns

One advantage of a biotech firm obtaining 100% or a very high proportion of the economic value of a technology is the potential for increased returns for shareholders by way of future dividends from an expanded revenue and profit base.

Potential for increased capital returns

Another advantage may be the potential for superior capital returns should the firm be acquired for, among other things, its world-wide rights and to all indications or uses relevant to a technology. The principle at work here is that of the 'one stop shop', which means that a potential acquirer needs to deal with one party to purchase an asset, or as happens in many cases, they buy the business that owns the asset.

Cont'd on page 4

Re-negotiated Agreements

In-licensing Agreements	
Prima Biomed	**Biomira, Canada**
	Terms
Date of Initial Agreement	11-Mar-04
Licensing and Development Agreement	Prima gains rights from Biomira regarding to employ the Mucin -1 Antigen in for use in dendritic cell based therapies
	Biomira has sole option of licensing of exclusive worldwide commercialisation rights (expiring 120 days from completion of Phase II a trial)
	Biomira acquires 10% stake in CancerVac Pty Ltd, a subsidiary of Prima, and a seat on the board
Date of New Agreement	13-Feb-07
Variation to Licensing and Development Agreement	Prima gains world-wide rights to Mucin -1 Antigen for use in dendritic cell based therapies
	Milestone payments: reduced
	Royalties: reduced

Avexa	**Shire Pharmaceuticals, UK**
	Terms
Date of Initial Agreement	18-Jan-05
License Agreement	AVX gained Rest of World (ex Nth America) rights for apricitabine (ATC), a HIV drug candidate
	Shire Pharmacueticals takes $2 million equity stake in AVX
	Option to acquire 4 million shares on completion of Phase IIb
	Milestones: none to pay
	Royalties: reciprocal royalties payable
Date of New Agreement	23-Jan-07
License Agreement	AVX gained North American rights for ATC
	AVX paid US$10 million upfront and 8 million in AVX shares
	Milestone payments: not disclosed
	Royalties: not disclosed

Neurodiscovery	**Ampika, UK**
	Terms
Date of Initial Agreement	2004
Collaboration Agreement	NDL gained 50% interest in a natural product pain formulation NSL-101
Date of New Agreement	11-Jan-07
License Agreement	NDL gained 100% interest in NSL-101
	Upfront payment of GBP10,000
	Milestone payments: not disclosed

Starpharma	**Biomolecular Research Institute (BRI), Melbourne**
	Terms
Date of Initial Agreement	12-Aug-96
Technology Agreement	SPL must pay the BRI 25% of net income, until expiry of relevant patent
	BRI ganted SPL a world-wide exclusive license to develop, exploit and commercialise certain dendrimer technologies
Date of New Agreement	10-Jun-06
Cancellation of royalty obligation	SPL acquires outright ownership of the specified technologies
	BRI received 7.112 million shares in SPL

Out-licensing Agreements

Progen Industries	**Medigen Biotechnology Corp (MBC) (Taiwan)**
	Terms
Date of Initial Agreement	01-Jun-00
Strategic Alliance	MBC to fund and conduct certain trials including one Phase II trial in oncology, one Phase II trial in cardiovascular and two proof-of-principle trials in oncology
	MBC entitled to receive 15% of all future revenues from PI-88 used in cancer and cardiovascular diseases
	MBC invested $11 million for 2.75 million shares; PGL receives 19.9% stake in MBC
Date of Revised Agreement	01-Apr-05
	PGL waived requirement for MBC to conduct one of the Phase II trials
	MBC to fund 50% (up to $1 million) of PI-88 as a firstline therapy in melanoma
Date of New Agreement	16-Jan-07
	MBC forgoes right to 15% royalty on PI-88 proceeds of commercialisation
	MBC released from obligations conduct further clinical trials
	PGL returns 19.9% stake in MBC
	PGL issues 500,000 shares to MBC, and pays $300,000
	PGL issues 732,000 shares and $2 million in cash or shares to MBC, upon MBC completing two clinical milestones
	PGL to pay $4 million to MBC on PI-88 reaching specified clinical and commercial milestones
	PGL issues 1,000,000 options to MBC, upon MBC providing final HCC phase II study report

Peplin	**Allergan , USA**
	Terms
Date of Initial Agreement	25-Feb-02
Research Collaboration and License Agreement (RCLA)	Exclusive license to develop and commercialise PEP005 for topical and intra-lesional treatment of skin and eye conditions in North and South America for the term of Peplin's US patent
	Upfront payment: $US 1 million
	Total potential payments: US$ 22 million
	Royalty: market rate on net sales
Date of New Agreement	08-Feb-04
Agreement to discontinue	All rights returned in addition to scientific data, IP and regulatory filings made under the RCLA
	PEP receives US$1.3 million
	PEP to pay Allergan certain development payments capped at US$4 million
	Allergan to continue Phase I Actinic Keratosis study

– *Licensing Agreement Renegotiation - from page 1*

Improve investment appeal
A third reason is that 100% ownership of a chemical compound or technology, coupled to world-wide marketing rights can make a company much more attractive to international biotech investors. In fact, this was an important consideration for **MPM Capital**, a major US life sciences investor when it invested in Peplin in 2006. This improved clarity and upside potential is viewed positively by investors.

There are few companies on the ASX that have complete and unencumbered ownership over all their technology assets. Typically many companies have obtained world-wide commercialisation rights to a technology, but are obligated to pay royalties to inventors or research bodies.

The latest round of re-negotiations
While the gaining of world-wide rights to a compound, or the cancellation or royalty obligations may be desirable, a valid concern for investors what it has cost the firm to achieve these outcomes.

A preferred mechanism for paying for technology acquisitions or royalty buy-outs is the through the issue of shares. This was the case when Starpharma bought out its royalty obligation through the issue of 7.1 million shares to the BRI. While share issues are dilutive, the advantage for the company is that it can wait until a period of relative share price strength occurs to raise funds, instead of reducing cash resources at the time of the buy-out.

If cash payment have been made, a reasonable concern is whether the cash payment is appropriate. In the case of Avexa and Shire Pharmaceuticals, Avexa paid an up-front sum of US$10 million (in addition to 8 million shares). While US$10 million could well prove to be in later years to have been an attractive sum, the current issue is the drain that may have on the company's cash position. Avexa's cash position as of December 31, 2006 was $20.3 million. The Shire buy-out reduces that to $7.6 million, effectively precipitating another fundraising round in the near future. However, Avexa can make a very strong case in this instance for raising funds based on the its gaining rights to the all-important US market. Furthermore, Avexa's share price has risen strongly since the buy-out was announced, which supports Avexa's decision to re-cut its deal with Shire.

A second element of any re-negotiated deal is the extent of contingent, or milestone payments. For example, when Progen re-negotiated its royalty obligation to MBC, it paid only a small up-front cash sum of $300,000 and 500,000 shares, but the new agreement allows for increased cash payments on the meeting of certain milestones, by both parties.

Summary
The latest round of renegotiations of ownership rights by selected Australian biotech companies is overall quite positive. Specifically the initiatives of Avexa and Progen show a serious desire by these companies to improve potential investment outcomes for shareholders.

Prima Biomed – Funding Risk Increases

Prima Biomed (PRR: 5 cents) has renegotiated its licensing arrangement for its rights to use the mucin-1 (MUC-1) antigen with **Biomira** in Canada. Following completion of Prima's Phase IIa ovarian cancer trial, Biomira had an option to exercise commercialisation rights for the technology outside of Australia and New Zealand. It has elected not to do so and in return Prima has an improved licensing arrangement for use of the mucin-1 antigen in dendritic cell based immuno-therapeutics.

Prima has developed a dendritic cell cancer immuno-therapeutics (vaccine), called CVac. It is an autologous cancer vaccine, which uses a patient's own dendritic cells and primes these cells *ex vivo* to recognize the mucin-1 antigen which is over-expressed on a number of cancer cell types. In breast, ovarian, prostate and renal cancers, it is over-expressed in 85% or more cancer cells. In colon, lung and pancreatic cell cancers, it is over-expressed on between 60% - 65% of cancer cells.

Biomira's decision not to exercise option
It appears that Biomira doesn't have the appetite nor the capability to fund another cancer vaccine program, concentrating on other therapeutic programs. Its lead cancer program, a liposomal cancer vaccine for treating lung cancer, has moved into Phase III trials and has been licensed to Merck KgaA in Germany. In October last year Biomira acquired a small molecule drug discovery company, **ProlX Pharmaceutical Corporation**, and this confirms the company's shift of focus away from cancer vaccines.

Biomira's decision not to exercise its commercialisation rights for CVac means that Prima Biomed must now fund further development of the program on its own or find a new partner. It's not overly important why Biomira made this decision and as discussed earlier, regaining commercialisation rights can result in a favourable outcome for some companies.

Whilst Prima has negotiated a more favourable licensing arrangement to the mucin-1 antigen for its CVac technology, it must now raise additional funds for the Phase IIb trials. This may occur from accessing public equity markets, forming a development partnership or from selling other assets.

Amended licensing terms with Biomira
Under the new licensing terms negotiated with Biomira, Prima has reduced by 40% the payments that need to be made to Biomira if the technology is approved by the FDA. Royalty rights payable to Biomira have also been reduced materially for the US and to small single digit royalties for the rest of the world.

Funding risk
One of the main risks for Prima now remains funding. At the start of this year, the company had $2.1 million cash which at its current burn would last the company only seven months. The company has other illiquid assets, including $3.2 million of Trillium stock, and assets in other projects Oncomab and Panvax. We anticipate further price weakness as the company attempts to raise further funds.

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Prima - previous page

Core technology impressive

The core technology in CVac remains impressive and it is a therapeutic program that deserves to be progressed. Results from a Phase I study has seen two patients with late stage cancer (renal and ovarian) survive to this day, well exceeding expectations. The initial results from the Phase IIa trial in 21 evaluable patients showed that 21% responded to therapy. These were patients in later stage disease with incurable ovarian cancer. This was a promising result and better treatment outcomes could be expected if patients were treated at earlier stages of disease. The treatment was safe with no serious adverse events observed.

Technology success dependent on external factors

The future of this technology is somewhat dependent on the commercial success of another company that is paving the commercialisation path for autologous cancer vaccines. **Dendreon** in the US has completed a Phase III trial with its autologous dendritic cancer vaccine in patients with prostate cancer. The company is awaiting an approval decision from the FDA regarding its therapeutic vaccine. A decision is expected by 15 May this year. If Dendreon's product does reach the market and shows that it is a viable commercial product, then the outlook for Prima's CVac will overwhelming become far more favourable. There are currently no autologous cancer vaccines on the market.

Looking forward

Prima will now look to conduct a Phase IIb study in Australia in up to 150 women with ovarian cancer. Up to $7 million will need to be raised in the short term, which will be challenging given Prima's market capitalisation of $10.5 million. It's expected a new CEO will be appointed by year's end. Other options for the company are to find a collaborative partner or to sell the technology. Full Phase IIb study results are expected to be released in coming weeks and will be presented at ASCO in May by Dr Paul Mitchell, the principal investigator for the trial.

Recommendation

Prima has been a disappointing stock although it has technology that offers a new paradigm in cancer therapy that deserves to be fully tested and commercialised if the clinical evidence is convincing. However, the likelihood of further price weakness can be expected as the company seeks to raise further funds. A major risk with the company is its poor position to raise funds to continue commercialisation of the technology.

Bioshares recommendation: **Speculative Lighten Class B**

Metabolic Pharmaceuticals – Second Phase IIb Trial Fails

Metabolic Pharmaceuticals announced the results of its repeat Phase IIb trial of its obesity drug candidate AOD9604 on Wednesday, February 21. The trial was unblinded the previous Friday and it was clear that the compound had not generated a statistically significant outcome, in other words in did not perform better than the placebo. Absolute weight loss in all of the three different dose groups (0.25 mg, 0.5 mg, 1 mg) was less that 1 kg, over both 12 and 24 weeks. The company has now terminated development of AOD9604 in the area of obesity.

From an investment perspective, the most positive aspect of this announcement was that the result was clear-cut, and accordingly the conduct of the company in reporting the results was clear-cut and straight forward. Metabolic's share price has fallen 75% from the last trade before it went into a trading halt on Monday. However, the clear-cut nature of the announcement allows both investors and the company to move forward quickly.

Metabolic is now capitalised at $57 million. Deducting cash at hand of $24 million, indicates the market is ascribing a value to the company's other compounds, capabilities and technology assets of $33 million. These assets include a compound ACV1 in development to treat neuropathic pain and an oral peptide delivery platform. The company is also exploring the application of AOD9604 in as a potential treatment for osteoporosis.

While it is difficult to value the company's early stage programs, the clinical stage ACV1 program may provide investors with more meaningful parameters for investment consideration going forward. However, investors should note that while the market for neuropathic drugs is attractive, drug development is difficult and development risks for the conotoxin based ACV1 are much higher than for the AOD9604 peptide, essentially because of markedly different safety issues.

Forthcoming drivers for Metabolic will centre on developing proof of concept data for the company's oral peptide delivery platform, which will necessitate the initiation of collaborations with other companies, and the commencement of a second Phase IIa trial of ACV1.

Bioshares recommendation: **Speculative Hold Class A**

Neurodiscovery – Leveraging Expertise in Neuropathic Pain

Developing therapeutics for the treatment of pain is difficult. Pain is mediated through many, many pathways in the body. Shut one of those down and chances are that pain will be transmitted through another. Neurodiscovery is developing therapeutics to treat predominantly neuropathic pain that relates to injuries sustained to the peripheral or central nervous system. It is often a chronic condition where the pain sensation continues to be relived due to an electrical short circuit. The pain becomes more sensitive as the injury progresses. Neuropathic pain is a condition for which there exists a significant unmet clinical need.

It's no coincidence that many of the currently most effective pain drugs such as morphine, codeine, pethidine, fentanyl and methadone are derivatives of a natural compound, discovered over 5000 years ago, the opium poppy. However, opiate-based drugs have shown to be largely ineffective for the treatment of neuropathic pain and come with side effects such as constipation, cognitive slowing and addiction to treatment. Treatment options for neuropathic pain are poor, but once again serendipity has provided the best breakthrough in this field; the drug gabapentin was developed originally as a treatment for epilepsy, but in recent years has become the most popular treatment option for neuropathic pain, effective in between 30% - 50% of patients.

More barriers to drug development

Another issue hampering drug development efforts for neuropathic pain is the lack of suitable preclinical models. Translation of preclinical evidence into the clinic is poor, predicting clinical dose is difficult and there is no effective gold standard to which to compare new drug candidates. Patient response can vary widely. Furthermore, successful treatment of neuropathic pain may require that multiple targets or pathways may need to be modulated.

Pain drug developers now need to develop more specific clinical trial strategies, selecting subgroups of patients for clinical trials, as it is unlikely one drug will treat all. Positive preclinical data can give researchers only a 5% -10% likelihood of success, and following testing in healthy volunteers this increases only to about a 20% probability the drug will make it to market.

Neurodiscovery's approach to drug development

Neurodiscovery (NDL: 21 cents) is tackling this difficult therapeutic area with a clever strategy. The company's subsidiary, **Neurosolutions**, specialises in conducting electrophysiology testing for pharma and biotech, which measures changes in the CNS pathways through which neuropathic pain is transmitted. At the same time, the company has established its own drug development program.

Neurodiscovery has adopted a portfolio approach to its drug development efforts recognising the difficulty of the therapeutic space. It currently has four separate drug development programs at various stages of development

Neurosolutions

Neurosolutions is a profitable standalone business that operates out of the **University of Warwick**, about one hour out of London. *Bioshares* recently visited the facility and met with the management and scientists. The head of Neurosolutions is Professor David Spanswick. Neurosolutions has an excellent reputation as experts in the field of preclinical electrophysiology testing for the drug development industry. In the six months ending December last year, Neurosolutions generated sales of just under $900,000, an increase of 63%.

In December last year, Neurosolutions hosted a pain therapeutics conference in Edinburgh that was well attended by over 100 researchers in the sector, including many from major pharmaceutical companies. The conference helped promote the company's contract servicing business to the industry, which is moving to outsourcing because of the specialist and labour intensive nature of the service. Neurosolutions has a number of regular clients that use its services. Many of these are big pharma based in the US, UK, Canada, France and Germany. Clients include **GlaxoSmithKline**, **Pfizer**, **AstraZeneca** and **Amgen**.

Services offered by Neurosolutions

Neurosolutions provides between 100 –150 types of tests using measurement of electrical conductivity to assess the effect of novel drug candidates on electrical signaling pathways (ion channels) in *in vitro* and *in vivo* assays. This is a service that is very specialised and it is required for the assessment of potential drug candidates in disease areas including Alzheimer's disease, pain, epilepsy, depression, anxiety, schizophrenia and spinal damage. The company employs 14 staff. The unit is led by Professor Spanswick, an acknowledged expert in neurology disorders, which is committed, together with the University of Warwick, to the university spinout business. The university is now a minority shareholder in Neurodiscovery.

Lead Candidate – NSL-043

Possession of a 100% owned subsidiary that specialises in electrophysiology testing has allowed the parent company, Neurodiscovery, to leverage this asset and screen novel drug candidates.

As mentioned last week in Bioshares 204, Neurodiscovery's lead compound, NSL-043, was brought to the company by a Japanese biopharmaceutical company, **Sosei Group Corporation**. Sosei had asked Neurodiscovery to screen a range of compounds and the agreement reached was that the two companies would share any future development costs and income entitlements.

NSL-043 was selected because it had been tested in a number of preclinical models by Neurosolutions and was found to be highly effective in all. It was tested in a sciatica model, in post-operative pain and diabetic neuropathy. In each case it was compared to gabapentin, a drug that while effective in some sufferers, produces sedation at high doses. However NSL-043 showed no sedation and its most positive effect was observed at a lower dose.

Cont'd over

The drug has previously been tested in approximately 500 people to treat inflammation in Japan and had made it through to Phase III clinical trials. This week, Sosei announced that the drug, called SD118 (or NSL-043) by Sosei, had successfully completed preclinical testing and will now move into Phase I trials. Although safety studies were completed by the Japanese originator company several years ago, new safety studies need to be conduct to conform with contemporary drug development protocols. The drug has a novel mechanism of action and patents have been filed with more in the process of being filed. Phase II studies are expected to begin in 2008 and with neuropathic pain, results should be available relatively quickly.

The Japanese originator company which discovered the company will receive a small royalty stream from sales outside of Japan and retains Japanese marketing rights for the drug. Costs and future income streams will be shared equally by Sosei and Neurodiscovery.

Sosei is focusing on drug repositioning for its drug development strategy. It in-licenses pharmaceuticals from international pharmaceutical companies to sell into the local market to support its business and has its own 'drug reprofiling platform'. Last year the company acquired an English drug repositioning biotech company, Arakis, for GBP106 million.

NSL-036

Another compound to come out of the Sosei/Neurosolutions screening program was NSL-036. This compound had also been trialed for treatment of an inflammation condition although it had only been tested to the preclinical level. It is a larger compound than NSL-036 and needs to be injected, which means it may be developed as a subcutaneous injection. It is very long acting compound and was the second best compound tested by Neurosolutions for the treatment of neuropathic pain. At this stage, it appears that development efforts will concentrate more on the lead compound, NSL-043.

NSL-101

NSL-101 is Neurodiscovery's second most prominent compound in development. The compound is derived from a medicinal plant used in Peru by the indigenous population for many years. It has shown to be highly effective in preclinical studies, completely halting electrical activity at the nerve, a phenomena that is expected to be repeated in human studies. The compound will be trialed as a topical application in proof-of-concept clinical studies as early as mid year. The compound is sourced from the indigenous plant, *Ampika Phytobase*, found and grown in Peru. Neurodiscovery has recently acquired full rights to this compound from Ampika Ltd and has rights to access a further 500 natural compounds from Peru.

The difficulty the company has is in securing intellectual property protection with this program. Given the prior art, gaining composition of matter or use patent protection is unlikely. The company will need to develop a proprietary formulation of the product that may include extracts of the active ingredient, and for this clinical trials will be required. Neurodiscovery has access to the natural product in Peru which gives the company first mover advantage with this product should it generate positive clinical data.

Neurodiscovery has the option with this product to develop it either as a nutraceutical, for which the path to market will be faster although with less IP protection. As an over-the-counter product, it could be on the market in as early as two years. Alternatively it can develop the product as a pharmaceutical grade compound although lengthy clinical trials will be required. The upside with the latter approach is that it could sell for a premium and could be sold with more product claims. It would also offer the company some protection from competitors.

NSL-105

This program is based on creating novel chemical entities based on slight variations to existing pain therapeutics. Neurodiscovery's scientists have a deep knowledge of the characteristic structures of existing pain drugs and are using this knowledge to construct novel drug candidates. The company is working in conjunction with a Cambridge (UK) based chemistry company that is constructing the novel compounds that are then tested at Neurosolutions. At least 12 different compounds to date have been supplied.

Market size

The global market for neuropathic pain is valued at US$2.1 billion a year on the basis of sales of existing products, with gabapentin sales making up approximately half of that market. In 2004 generic versions of gabapentin reached the market slashing sales. In 2005, Pfizer introduced an improved analogue of gabapentin, called pregabalin, for the treatment of epilepsy and neuropathic pain, generating sales last year of approximately US$1.1 billion. An effective drug for treating neuropathic pain arguably has the potential to become a blockbuster drug (sales in excess of US$1 billion).

Challenges

Developing novel pain therapeutics is a difficult and challenging task. The variation in patient response and patient dosage required, the multiple pathways in the body in which pain can be transmitted and the difficulty in conducting preclinical studies that accurately translate into the clinic are major barriers to drug development in this area.

Neurodiscovery has adopted an approach that recognises these challenges. The company has a portfolio approach, understanding that in this field a broader shot at goal is required. It has a well regarded expertise in preclinical electrophysiology that the company is using as a platform to screen and design neuropathic pain drug candidates. The greatest chance of success in this field is to rapidly move compounds into clinical studies to establish efficacy. Neurodiscovery is moving along this path with two clinical studies (on NSL-043 and NSL-101) set to begin clinical studies this year and a Phase II program expected to begin next year (with NSL-043).

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The company's lead compound, NSL-043, has generated consistently positive data in several preclinical animal models and the compound has a known good safety profile. The second drug candidate, NSL-101, has a history of use with indigenous population in Peru and has a strong likelihood of generating efficacy as a topic pain treatment.

Neurodiscovery also has access to follow-on compounds from Ampika with over 500 medicinal plants used in Peru and new drug candidates being synthesized based on existing pain drug templates.

Summary

Neurodiscovery is capitalised at $8 million with $1.8 million in cash at the beginning of this year. The company will need to raise further funds to support its drug development efforts. Neurodiscovery provides investors with a speculative investment drug development opportunity addressing a multi-billion dollar, poorly addressed therapeutic market, coupled to underlying sustainable business in Neurosolutions.

Bioshares recommendation: **Speculative Buy Class B**

Bioshares Model Portfolio (23February 2007)

Company	Price (current)	Price added to portfolio
Acrux	$1.03	$0.83
Alchemia	$1.21	$0.67
Bionomics	$0.32	$0.21
Cogstate	$0.19	$0.18
Cytopia	$0.69	$0.46
Chemgenex Pharma.	$0.74	$0.38
Optiscan Imaging	$0.49	$0.35
Neuren Pharmaceuticals	$0.50	$0.70
Peplin	$0.81	$0.83
Peptech	$1.73	$1.31
Phylogica	$0.38	$0.42
Probiotec	$1.15	$1.12
Progen Industries	$6.85	$3.40
Sunshine Heart	$0.21	$0.19
Tissue Therapies	$0.58	$0.58
Ventracor	$0.94	$0.92

Portfolio changes

Prima Biomed have been removed from the portfolio. Tissue Therapies has been added. We are taking losses with Metabolic Pharmaceuticals and removing it from the portfolio.

The Bioshares 20 Index

Change from June 30, 2006	**46.3%**
Change from Dec 31, 2006	**15.9%**
Change - week ago	**-1.2%**

Nasdaq Biotech Index

Change from June 30, 2006	**11.3%**
Change from Dec 31, 2006	**3.5%**
Change - week ago	**0.3%**