

# Welcome



BioTech Capital has made very strong progress over the past six months in adding to its investment portfolio. A total of 34 business plans were reviewed since 30 June with detailed due diligence conducted on five companies.

Investments were concluded in two of these companies. Further detailed information on these companies can be found later in this report.

The flow of opportunities to the company remains very solid. Our philosophy is to maintain a very disciplined approach ensuring that investments are only concluded after very careful, lengthy and detailed due diligence. We believe this to be the only way to approach investment in this sector. The most common reasons for an investment to not materialise are either issues with intellectual property (ie: the company's technology or the way the ownership is structured) or that further research highlights problems either with management or size of markets. There are many good ideas emanating from within Australia's research community. However, not all good ideas have the potential to be turned into successful companies.

As we continue to build the number of investment companies within BioTech Capital you will see that we are constructing a diversified portfolio. This diversification is not only by type of activity but also by stage of development. Eventually, we will have between 10-20 companies ranging from early stage right up to larger companies very close to listing on public stockmarkets.

Once an investment is made we adopt an active stance providing ongoing feedback and advice to our companies. This helps to maximise the potential of our investments and demonstrates our 'value added' approach by providing access to corporate, financial and international networks.

Proteome Systems has announced its intention to progress with a listing on the Australian Stock Exchange during 2002 – market

conditions permitting. Current indications suggest that the valuations will be significantly higher than those at the time BioTech Capital made its investment. We are in the process of securing a commitment from Proteome Systems to reserve a portion of the float for shareholders in BioTech Capital. This means that as shareholders you will be offered a guaranteed allocation should you choose to invest.

As a pre-cursor to this likely float we recently announced the early exercise of options in Proteome Systems held by BioTech Capital. Combined with the new investments (Xenome, Biocomm) total invested/committed capital stands at \$19.4 million or 49.5% of total assets. Based on our experience to date we would reasonably expect to conclude a further 2-4 investments over the remainder of 2002 taking the portfolio to around 70% invested.

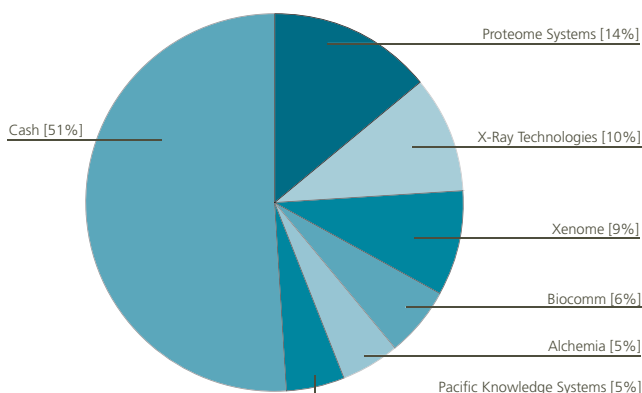
I would also like to take this opportunity to pass on the Board's thanks to Michael Boyd who recently announced his resignation due to other commitments. The Board is actively considering a number of suitable candidates to add to the Board's existing skill set.

For those shareholders with Internet access, I would encourage you to bookmark our website [www.biotechcapital.com.au](http://www.biotechcapital.com.au) which will provide you with the latest information available on the company. In addition, I would also suggest you register for our email updates via the online registration form on our website. Formal communication to shareholders will take place on a half-yearly basis.

Thank you for your support as shareholders and I look forward to what is shaping up as a very exciting year ahead.

**WEB Ireland**  
Chairman  
BioTech Capital Ltd

## BioTech Capital Ltd Investments Overview



<b>Net Assets:</b>	<b>\$39.12 million</b>
<b>Per share equivalent:</b>	<b>48.88 cents</b>

## Board of Directors

### Bill Ireland (Chairman)

Managing Director of Challenger International. Experience in financial markets, project development, financing and marketing new business ventures.

### Alastair Davidson

Experience in financial markets, and investment banking structured products.

### Harry Karelis

Experience in financial markets, and venture capital. First degree in microbiology and biochemistry.

### Irene Lee (Independent Director)

Lawyer with experience in investment banking, funds management, public company Directorships.

## Xenome Ltd



### Overview

Xenome Ltd (Xenome) is a Brisbane-based company established in January 2000 as a spin-off from the Centre for

Drug Design and Development at the University of Queensland. Xenome is focused on the identification and synthesis of novel molecules derived from the venoms and toxins of various marine and other organisms. Xenome's research has led to the production of the world's largest library of molecules from these venoms which are now in demand by biotechnology and pharmaceutical companies from the USA and Europe. These compounds have enormous potential in the area of pain management given their very selective and specific activity on parts of the nervous system responsible for the transmission of pain signals.

Xenome has established its own laboratories incorporating molecular biology, peptide synthesis and pharmacology to operate a discovery program and to optimise drug candidates.

The company has a number of molecules under development that exhibit very attractive and favourable activity and side-effect profiles and recently discovered a novel family of molecules with significant potential for application in the pain market. This discovery was published in the prestigious journal *Nature Neuroscience* confirming the world-class level of research conducted by Xenome and its researchers.

In addition to these in-house molecules, the company also has rights to any income derived by the University of Queensland to a drug lead called AM336. This molecule has just successfully completed a Phase I/II trial managed by ASX-listed AMRAD for application in chronic pain relief initially in cancer patients. AMRAD intends to progress this molecule to a full scale international Phase II trial during 2002. The worldwide market for this application is estimated by AMRAD to be US\$400 million.

Xenome's major shareholders are the University of Queensland, Medica Holdings and BioTech Capital.

### Venoms

Venoms are used by certain organisms as both a predatory and defence mechanism. Examples include snakes, spiders and various marine organisms including cone snails. These venoms typically consist of a cocktail of molecules each with a very specific mode of action. Invariably, these molecules have an effect on the nervous system and act by paralysing the victim allowing the organism either to escape or to eat. In this way, slow moving organisms such as marine snails have the ability to paralyse and prey on fast moving fish.

The ability to purify these venoms into their underlying constituents/toxins provides scientists with the ability to study the individual effect of each of the toxins. Xenome has shown that these toxins have remarkable specificity and selectivity in their mode of action providing the opportunity for drug development to target very specific parts of the nervous system.

### Update

Xenome continues to expand the size of its venom library providing an enormous resource for drug screening using selected targets. This library is of particular interest to groups operating in the area of ion-channels (cellular mechanisms involved in a range of activities including the transmission of pain signals).

Xenome recently announced alliances with Cytopia ([www.cytopia.com.au](http://www.cytopia.com.au)), and Ionix Pharmaceuticals ([www.ionixpharma.com](http://www.ionixpharma.com)) which will see Xenome's library of molecules screened against these companies' cellular targets. These agreements serve to demonstrate the quality of the companies' technology and management in executing these collaborative alliances.

Xenome is also progressing its internal lead molecule towards clinical trials with application in the area of pain management. As part of the drug development process Xenome is utilising advanced genomic and peptide chemistry techniques to generate a range of synthetic versions of the naturally occurring molecule in order to try and enhance activity whilst controlling side-effects.

### Genomics, advanced synthetic chemistry and drug development

Traditionally, the study of venoms of various organisms has meant the collection of large numbers of these creatures and the painstaking extraction of workable volumes of venoms.

The significant advances in technology has meant that Xenome is applying cutting edge research techniques. Typically, this would involve the collection of very small numbers of creatures. The venom ducts of these organisms would then be extracted and the DNA sequence of each of the toxins isolated and studied. This then allows for the relatively rapid production of the desired molecule using synthetic techniques. Once the underlying gene sequence is known then the protein sequence is also known and can be manufactured on the bench in the lab.

Xenome then takes this process one step further with the aim of improving the activity profile of the naturally occurring protein by making certain modifications to its structure to test for enhancements in activity or better side-effect profiles.

Once a desired compound has been identified it can progress through the standard pre-clinical and clinical trial process to evaluate safety and efficacy. It is at this point that Xenome would likely partner with a major pharmaceutical company to progress the drug lead further.

<b>Amount Invested:</b>	<b>\$3.5 million</b>
<b>Percent of Portfolio:</b>	<b>8.9%</b>
<b>Ownership of Company:</b>	<b>27.3%</b>

[www.xenome.com.au](http://www.xenome.com.au)

# 2 Biocomm



## Overview

Biocomm represents BioTech Capital's most recent investment and can best be described as an intellectual property management company.

Biocomm is a Melbourne-based company whose primary aim is to improve the effectiveness with which academic research in medical biotechnology is commercialised. Its role is to provide an internationally recognised high quality business development service to commercialise biomedical research from its academic members.

### Biocomm's members include:

- Monash University's Faculty of Medicine
- RMIT Faculty of Life Sciences
- Baker Institute of Medical Research
- Prince Henry's Institute of Medical Research
- Victorian College of Pharmacy
- Peter MacCallum Cancer Institute
- Mental Health Research Institute
- MacFarlane Burnet Centre
- Murdoch and Children's Research Institute
- Neurosciences Victoria
- St Vincent's Institute of Medical Research
- Austin Research Institute

Biocomm provides a range of specialised services to its members.

Services include:

- scientific and commercial assessment of intellectual property;
- advising scientists on how best to maximise the value of their biomedical innovations by protecting them with patents and developing appropriate business strategies;
- developing a greater understanding of commercial opportunities among scientists;
- providing a contact pool and information service on the biotechnology arena;
- promoting Australian biomedical innovations at a national and international level;
- market analysis;
- preparation of business plans;
- establishment and development of start-up companies;
- licensing arrangements with biotechnology and pharmaceutical companies;
- negotiations with funds, brokers and other capital providers; and
- identifying sources of funds.

The business model aims for growth in a number of areas:

1. Increasing the number of member institutes from across the country generating fee income.
2. Identification and sourcing of technology licensing opportunities which will see Biocomm establish a growing recurring income stream from royalty payments.
3. Bringing together complementary technologies and establishing new businesses acquiring an equity stake in these businesses.

The value of the investment in Biocomm will crystallise most likely through a listing on the Australian Stock Exchange in the next 3-5 years.

## Update

As this investment was concluded only very recently we expect updated information to become available over coming months.

The investment in Biocomm is subject to certain conditions precedent which are expected to be achieved in coming weeks.

The total amount invested will range from \$2.5-3 million depending on the final investor mix.

<b>Amount Invested:</b>	<b>\$2.5-3 million</b>
<b>Percent of Portfolio:</b>	<b>6.4%-7.7%</b>
<b>Ownership of Company:</b>	<b>*TBA</b>

\*Dependant on the final investor mix but in any case will be >10%

[www.biocomm.com.au](http://www.biocomm.com.au)

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## Proteome Systems Ltd



### Overview

Proteome Systems (PSL) is at the forefront in the field of proteomics – the handling, separation,

manipulation and identification of proteins. The company has developed three core divisions:

- (i) **Hardware** – the supply of equipment to enable proteomics research;
- (ii) **Informatics** – software to manage massive data generated through proteomics analysis; and
- (iii) **Discovery** – the application of the company's technical expertise in areas such as cancer, aging and infectious disease.

### Update

PSL has made remarkable progress over the past six months with one of the highlights being the announcement that IBM had selected PSL to be one of a handful of life-science firms globally to jointly develop and market solutions to advance protein research and drug discovery.

This complements a string of other achievements including the award of a Federal Government grant to develop a test for the performance enhancing drug EPO, alliances with a range of corporations and research institutes, and the launch of its integrated hardware platform ProteomIQ™.

The company has also raised additional capital at a price of \$12.50 per share which compares very favourably with our entry price of \$6.00. The holding has not been formally revalued at this time.

BioTech Capital recently announced it had exercised options in PSL at a price of \$9.50.

The company is now rapidly commercialising its technology and is on track for a public listing on the Australian Stock Exchange later this year. Current indications are that the value of the company at that time will be significantly higher than our entry price. At this stage, we have secured an undertaking to provide BioTech Capital shareholders with a priority entitlement providing the opportunity (but not the obligation) to invest directly in this company.

<b>Amount Invested:</b>	<b>\$5.375 million</b>
<b>Percent of Portfolio:</b>	<b>13.8%</b>
<b>Ownership of Company:</b>	<b>2.6%</b>

[www.proteomesystems.com](http://www.proteomesystems.com)

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## X-Ray Technologies Pty Ltd



### Overview

X-Ray Technologies (XRT) was formed as a spin-out company from the CSIRO – one of Australia's

leading research organisations. The core technology relates to the interpretation of data generated as an X-Ray passes through materials (Phase Contrast Imaging). This data can be converted to an image providing very high resolution capability using relatively low cost equipment.

Importantly, this image resolution can be achieved using 'bolt on' additions to existing hardware (scanning electron microscope) resulting in an 'evolutionary' rather than 'revolutionary' product.

As a high resolution imaging technology the applications are very broad and encompass medical, animal imaging, semiconductor, aerospace and paper & packaging markets. The company is presently focusing its efforts on the semiconductor and medical markets with some success.

### Update

In November 2001, XRT announced the maiden sale of its X-Ray Ultramicroscope (XuM) high resolution imaging platform to a leading supplier of semiconductor test equipment – FEI Company. FEI is a US, NASDAQ-listed corporation.

The XuM will be used by a major US semiconductor manufacturer in an imaging development program designed to investigate its use in semiconductor failure analysis, fault identification, materials analysis, manufacturing and product development processes in advanced chip devices.

At the end of this evaluation program an assessment will be made as to whether or not to incorporate the XuM into it's global manufacturing operations. XRT can expect to generate significant revenue should this evaluation program prove successful.

In order to fund the rapid growth of XRT, the company is planning on conducting an additional capital raising in mid-2002 with indications that the valuation will be in excess of that paid by BioTech Capital.

<b>Amount Invested:</b>	<b>\$4 million</b>
<b>Percent of Portfolio:</b>	<b>10.3%</b>
<b>Ownership of Company:</b>	<b>20.0%</b>

[www.xrt.com.au](http://www.xrt.com.au)

# 5 Alchemia



## Overview

Alchemia was founded in 1995 to develop and commercialise a novel method for the production of carbohydrate compounds known as oligosaccharides – essentially sugar-based molecules. This field of science is increasingly being referred to as 'glycomics'. Alchemia's technology utilises custom chemical synthesis techniques potentially replacing the more limited and expensive enzymatic production methods.

As carbohydrates are a very important class of biological molecules (others include DNA and proteins) the ability to cost-effectively produce custom molecules opens up enormous opportunities to identify a whole new class of potential therapeutic molecules. Examples include anti-toxins, immunosuppressants for use in organ transplantations and anti-clotting agents such as heparin.

## Update

The company has expanded its US marketing presence and is in various stages of discussion with a variety of large pharmaceutical companies as well as groups interested in the nutraceutical applications (eg: potentially adding sugars to infant formula that are similar to those found naturally in breast milk).

The basic R&D is conducted in Australia and with recent expansion in it's capabilities Alchemia can rightly claim the title of one of the largest carbohydrate focused companies in the world.

Whilst the company's business plan has always highlighted a public listing on the US NASDAQ market, Alchemia is exploring the potential for an interim capital raising in Australia. This will take the form of either a private placement or potential listing on the Australian Stock Exchange in mid-late 2002. Current indications are that the value of the company at that time will be higher than our entry price.

<b>Amount Invested:</b>	<b>\$2 million</b>
<b>Percent of Portfolio:</b>	<b>5.1%</b>
<b>Ownership of Company:</b>	<b>3.3%</b>

[www.xrt.com.au](http://www.xrt.com.au)

# 6 Pacific Knowledge Systems

## PACIFICKNOWLEDGESYSTEMS

### Overview

Pacific Knowledge Systems (PKS) has commercialised technology known as Ripple-Down-Rules into a product specifically designed for the pathology industry known as LabWizard™. This product is designed as a productivity tool for pathologists in the interpretation of pathology results and is in use at a range of sites across Australia. The underlying technology has multiple applications providing an opportunity for developing other products.

### Update

Use of the company's product continues to rise with users reporting very strong feedback for LabWizard™. However, the continual consolidation of the Australian pathology market to the current point where the bulk of the market is dominated by 2-3 corporate groups has made revenue growth from current levels difficult. The true global nature of the technology means that offshore expansion is a strategic priority.



An internal restructuring of the company has occurred in order to maximise the probability of successfully partnering with an offshore based group to speed market entry.

Numerous discussions are underway in order to effectively penetrate these markets as well as diversify the application of the underlying platform technology.

<b>Amount Invested:</b>	<b>\$2 million</b>
<b>Percent of Portfolio:</b>	<b>5.1%</b>
<b>Ownership of Company:</b>	<b>10.0%</b>

[www.pks.com.au](http://www.pks.com.au)

## Contact Directory

**BioTech Capital Ltd** ABN 45 091 979 172  
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A member of the Challenger International Group

Listed on the Australian Stock Exchange

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Web: [www.biotechcapital.com.au](http://www.biotechcapital.com.au)

**Share Registry:** (for shareholder queries related to change of address, dividends, holding)

**ASX Perpetual Registry Services**

Tel: 1800 331 721  
Web: [www.registrars.aprl.com.au](http://www.registrars.aprl.com.au)

**Investor Enquiries:** 13 35 66

# **BioTech** Capital Ltd

[www.biotechcapital.com.au](http://www.biotechcapital.com.au)

**Key highlights:**

- Two new investments concluded
- Portfolio grows to six companies
- X-Ray Technologies announces maiden sale into North American market
- Options exercised in Proteome Systems
- Xenome advances drug lead into pre-clinical studies
- Xenome enters into strategic collaborations with national and international groups

# HALF-YEARLY REPORT TO SHAREHOLDERS

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