



# Biotech Daily

Monday April 2, 2012

*Daily news on ASX-listed biotechnology companies*

- \* **MARCH BDI-40 UP 6% - WIDENS LEAD OVER ASX200 UP 0.8%**  
- **PSIVIDA UP 91%, SUNSHINE HEART DOWN 25%**
- \* **TODAY: ASX DOWN, BIOTECH UP:**  
- **CELLMID UP 13%, ANTISENSE DOWN 6%**
- \* **BIONOMICS PRECLINICAL BACKING FOR OVARIAN CANCER TRIAL**
- \* **WEHI: T FOLLICULAR HELPER CELLS 'KEY TO IMMUNE DISORDERS'**
- \* **NUSEP CHASING \$1.5m OPTIONS EXERCISE PAYMENTS**
- \* **NOVOGEN PAYS INVESTORS MARSHALL EDWARDS RIGHTS DIVIDEND**
- \* **LA JOLLA COVE REDUCES TO 8% OF BONE**

## MARKET REPORT

The Australian stock market fell 0.14 percent on Monday April 2, 2012 with the S&P ASX 200 down 5.9 points to 4,329.3 points.

Sixteen of the Biotech Daily Top 40 stocks were up, eight fell, 10 traded unchanged and six were untraded. All three Big Caps fell.

Cellmid was the best, up 0.2 cents or 13.3 percent to 1.7 cents with 9.4 million shares traded, followed by Benitec and Optiscan both up 11.1 percent to two cents and 15 cents, respectively, with five million shares and 623,279 shares traded, respectively.

Bionomics, Genetic Technologies, Nanosonics and Phylogica climbed more than four percent; Biota and Prana were up more than three percent; Anteo, Mesoblast, Phosphagenics and Sirtex rose more than two percent; with Pharmaxis, QRX and Reva up more than one percent.

Antisense led the falls, down 0.1 cents or 5.6 percent to 1.7 cents, with three million shares traded.

Universal Biosensors lost 3.4 percent; Patrys, Prima and Sunshine Heart shed more than two percent; Cochlear and CSL lost more than one percent; with Acrux, Heartware, Resmed and Starpharma down by less than one percent.

### [BIOTECH DAILY TOP 40 INDEX \(BDI-40\)](#)

The Biotech Daily Top 40 Index (BDI-40) consolidated its lead on the S&P ASX200 in March, climbing 6.2 percent compared to the benchmark index up 0.8 percent.

For the year to March 31, the BDI-40 (which does not include the Big Caps of Cochlear, CSL and Resmed) was down 1.9 percent compared to the ASX200 falling 10.4 percent.

But as the long-term chart (below) shows, the 12-month comparison is against its record high since inception and over the 69 months since June 30, 2006, the BDI-40 has more than doubled, up 111.9 percent to a collective market capitalization of \$7551 million, while the ASX 200 has fallen 14.6 percent.

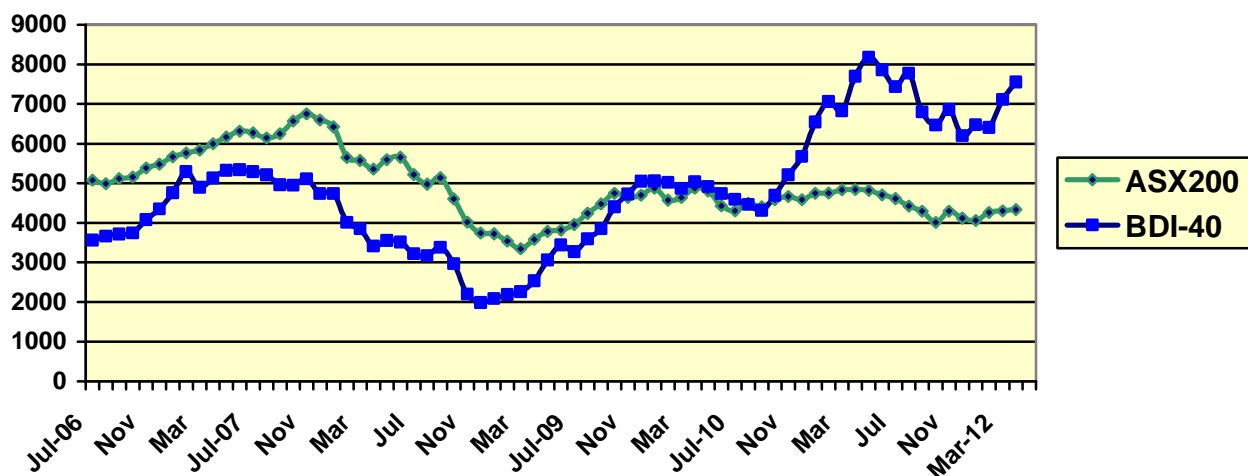
The Big Caps were up 8.2 percent for the month, with CSL again the driver, up 10.1 percent to \$18,753 million, on speculation that a weaker Australian dollar helped market expectations. Cochlear slipped 0.6 percent to \$3,458 million and Resmed improved 7.6 percent to \$4,622 million. The Big Caps lost 5.9 percent over the 12 months to March 31.

Twenty-one of the BDI-40 stocks were up, 10 fell and nine were untraded. Only three companies fell more than 10 percent, while 11 were up more than 10 percent. Heartware and Mesoblast effectively cancelled each other, with Mesoblast up \$93 million and Heartware down \$68 million, both moving less than 10 percent.

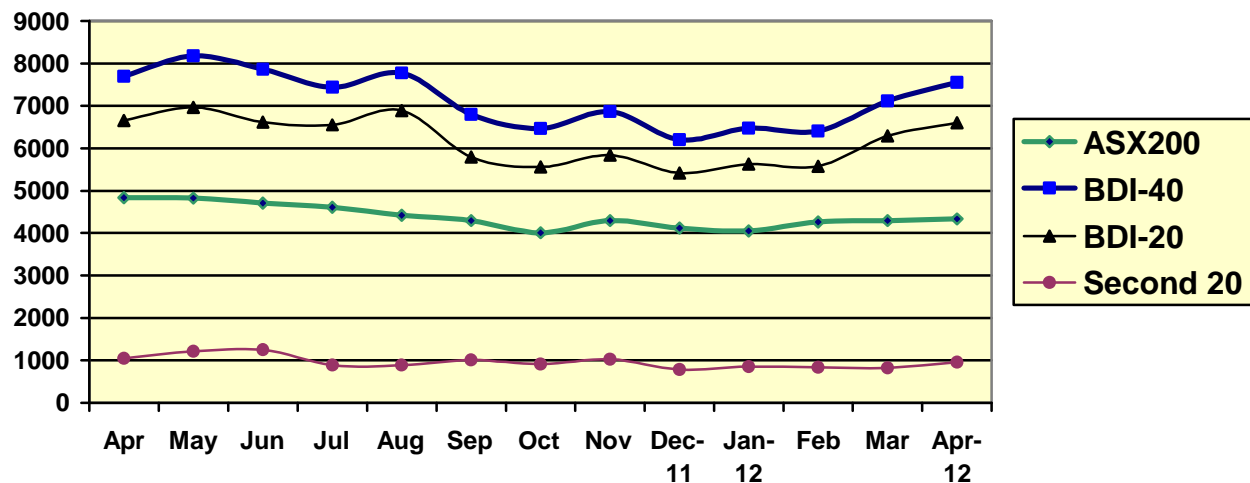
Psivida was March's best, up \$14 million or 90.5 percent to \$40 million, but still half its value of a year ago. Avita was up 32.6 percent to \$57 million; followed by Starpharma (30.8%) for the month, to an all time high of \$491 million and 61 percent above its market capitalization a year ago; followed by Biota (30.2%); Reva (29.5%); Tissue Therapies (23.3%); Phosphagenics (19.6%); Alchemia (17.9%); and Impedimed (12.5%).

Sunshine Heart led the falls, down \$14 million or 24.6 percent to \$43 million; followed by Antisense down 17.4 percent to \$19 million; Genetic Technologies (13.7%). There were no significant movements outside the BDI-40 in March, but we note that Biotron has climbed 153.3 percent from \$15 million a year ago to a market capitalization of \$38 million.

BDI-40 v ASX200 Jun 30, 2006 To Mar 31, 2012



BDI-40 v ASX200 Mar 31, 2011 To Mar 31, 2012



## BIONOMICS

Bionomics will present preclinical data tonight in Chicago on the anti-cancer activity of BNC105 in platinum-resistant ovarian cancer.

Bionomics said the presentation at the American Association for Cancer Research meeting would be given by research and development vice-president Dr Gabriel Kremmidiotis and cancer research director Dr Tina Lavranos, detailing the effects of BNC105 in mouse and in-vitro models of ovarian cancer.

A copy of the poster presentation, entitled 'Anti-cancer activity of the tumor-selective, hypoxia-inducing, agent BNC105 in platinum resistant ovarian cancer' is available at: [www.bionomics.com.au/siteFiles/files/AACR%202012%20Kremmidiotis%202774.pdf](http://www.bionomics.com.au/siteFiles/files/AACR%202012%20Kremmidiotis%202774.pdf).

The company said the data showed that BNC105 was "very effective in inhibiting the proliferation of the human ovarian cancer cell line, A2780 and its cisplatin-resistant derivative, A2780cis".

Bionomics said that the vascular disruption activity of BNC105 was "clearly demonstrated by reduction of blood flow in platinum resistant solid tumors of mice treated with a single dose of BNC105" and the result was an effective suppression of tumor growth.

The company said there was a statistically significant survival benefit was measured in BNC105 treated mice bearing platinum resistant ovarian tumors.

The presentation concludes that BNC105 "is very effective in inhibiting the proliferation of the human ovarian cancer cell lines A2780 and A2780cis at sub 1nM concentrations".

"BNC105P treatment inhibits tumor blood perfusion, suppresses the growth of solid tumors arising from the platinum resistant cell line A2780cis and improves animal survival," the poster said.

"It is reasonable to hypothesize that BNC105 has therapeutic application in this cancer setting. Clinical evaluation of BNC105 in ovarian cancer is warranted," the authors said. Bionomics chief executive officer Dr Deborah Rathjen said that platinum-based therapies were the standard of care in the treatment of a range of solid tumor types, "however resistance to this form of chemotherapy can develop quickly in women with ovarian cancer".

"With robust preclinical BNC105 data we have already advanced preparations to commence a clinical trial in women with ovarian cancer," Dr Rathjen said.

"This trial recently gained approval and Bionomics is working closely with its collaborators to initiate the trial as soon as possible," Dr Rathjen said.

Bionomics was up two cents or 4.2 percent to 50 cents.

## THE WALTER AND ELIZA HALL INSTITUTE FOR MEDICAL RESEARCH

Walter and Eliza Hall Institute says that the characterization of T follicular helper cells' could improve vaccination and lead to new treatments for immune disorders.

WEHI's Dr Stephen Nutt told Biotech Daily that T follicular helper cells were a specialized group of CD4 cells, also known as T helper cells, which were involved in developing antibodies.

Dr Nutt said that follicular T helper cells were fewer than half of one per cent of all white blood cells,

WEHI said that T follicular helper cells had the ability to remember infectious agents and developing long-lasting immunity and were dramatically increased in chronic inflammatory disease, suggesting that they could be a therapeutic target for treating these diseases.

The Institute said the research team, led by Dr Katja L  thje, Prof David Tarlinton and Dr Nutt discovered a means of identifying the T follicular helper cells while they were instructing the immune response, revealing the possible fates of the cells.

Their report, entitled 'The development and fate of follicular helper T cells defined by an IL-21 reporter mouse' was published in Nature Immunology and an abstract is available at: <http://www.nature.com/ni/journal/vaop/ncurrent/full/ni.2261.html>.

Dr L  thje said the team discovered T follicular helper cells were essential for developing strong and specific antibody responses to infectious agents.

"Antibody production critically relies on the interaction of two cell types: B cells that produce antibody, and helper T cells that recruit and 'teach' the B cells how to respond to infectious agents," Dr L  thje said.

"In this study, we ... discovered that amongst the rare T follicular helper cells, only a subset were actively involved in instructing B cells in antibody production," Dr L  thje said.

Dr Nutt said that one of the findings was that T follicular helper cells could remember being exposed to infectious agents, allowing them to rapidly react to subsequent attacks.

"The success of vaccines relies on antibody production and long-term immune memory," Dr Nutt said. "Without these, most routinely-used vaccines, including measles, mumps and tetanus, do not work."

"It is well established that antibody-producing B cells can remember a particular infectious agent and rapidly respond if and when they come across it again," Dr Nutt said.

"Our study shows, for the first time, that T follicular helper cells also develop memory to rapidly respond to infection," Dr Nutt said.

"This finding is incredibly important for the development of vaccines, which relies on immune memory to prevent subsequent infections," Dr Nutt said. "Some vaccines, such as polio are very effective at establishing long-term immunity, while others, such as the cholera vaccine are not particularly effective and need ongoing boosters".

"It may be that the vaccines are not establishing good T follicular helper cell memory and this could be something to look at for developing new vaccines for diseases that currently do not have good preventive treatments," Dr Nutt said.

Prof Tarlinton said that T follicular helper cells showed a remarkable flexibility in their role in immunity and their numbers were tightly controlled by the immune system, which could explain why increases in their numbers were associated with chronic inflammatory diseases, which include rheumatoid arthritis, type 1 diabetes, lupus and multiple sclerosis.

"In some models, a large increase in the numbers of T follicular helper cells is associated with the development of chronic inflammatory, or what we call autoimmune, diseases in which the immune system attacks its own tissues," Prof Tarlinton said.

Prof Tarlinton said that T follicular helper cells in mouse models were the cause of an autoimmune disease much like lupus in humans, suggesting that modulating the cells could be a potential treatment for autoimmune conditions.

### NUSEP

Nusep says it is awaiting the full payment for the exercise of 12,092,691 listed 15 cent options from two investors.

Nusep said the March 31, 2012 options were exercised by Goh Thee Woon for \$1,813,904 million and were originally taken in his own name, but in January 2012 the shares were transferred into Mr Goh's investment company DSC Healthcare Pte Ltd. The company said that Mr Goh owned 33.3 percent of the company and the remaining 66.7 percent was held by Samuel Chai.

Nusep said that at March 31, 2012 it had received \$316,730 in-part payment of the \$1.8m due on the exercise of the share options from Mr Goh.

The company said that Mr Goh had paid 52 percent of the money owing on these shares options leaving a balance of \$291,840.05 including interest owing on what is owed to the company.

But Nusep said that at March 31, 2012, Mr Chai had not made any payment against his debt of \$1,209,329.56 plus interest.

The company said it had sent letters to both Mr Goh and Mr Chai and expected to organize personal guarantees backed by tangible assets to pay the amount outstanding along with payment timetables.

Nusep said that in the absence of receiving these items the company would begin legal proceedings to recover the outstanding balance under the existing promissory notes.

Nusep was up half a cent or 22.7 percent to 2.7 cents.

### NOVOGEN

Novogen will pay an interim dividend, comprising 90 percent of the units received from its majority-owned subsidiary Marshall Edwards, through its rights offer (BD: Feb 22, 2012).

Marshall Edwards has offered US shares at 89 cents a share in the two-for-one rights offer, with one attaching option for every two new shares acquired (BD: Mar 20, 2012).

The company said that Marshall Edwards intended to use the proceeds to continue the clinical development of its two lead oncology drug candidates, ME-143 and ME-344.

Novogen said the dividend will be paid to all Novogen shareholders recorded on the register at 5pm on April 13, 2012.

The company said that details of the units offered under the Marshall Edwards rights offering will be mailed to shareholders on April 17, 2012.

Novogen was up 0.9 cents or 9.9 percent to 10 cents.

### BONE MEDICAL

La Jolla Cove Investors has reduced its substantial holding in Bone from 27,454,419 shares (13.7%) to 16,510,419 shares (8.2%).

La Jolla Cove said it sold 10,300,000 shares on March 28, 2012 at 1.22 cents each with earlier sales of 644,000 shares at 1.53 and 1.6 cents each.

Bone was unchanged at 1.3 cents.

## BIOTECH DAILY'S TOP 40 WITH MARKET CAPITALIZATION

<b>Company \$Am</b>	<b>Apr-11</b>	<b>Mar-12</b>	<b>Apr-12</b>
Cochlear	4,709	3,480	3,458
CSL	19,337	17,026	18,753
Resmed	4,466	4,295	4,622
<b>BDI-20</b>			
Acrux	502	631	664
Alchemia	132	123	145
Bionomics	166	157	169
Biota	190	139	181
Clinuvel	55	52	57
Genetic Technologies	36	51	44
Heartware	1,179	958	890
Impedimed	117	75	75
Living Cell	24	24	27
Mesoblast	2,023	2,171	2,264
Nanosonics	212	127	130
Pharmaxis	609	318	416
Phylogica	19	17	20
Prima	218	266	256
QRX Pharma	195	266	251
Sirtex	296	281	292
Starpharma	305	396	491
Sunshine Heart	43	57	43
Tissue Therapies	98	60	74
Universal Biosensors	199	121	116
<b>Second 20</b>			
Allied Health	7	22	22
Anteo	52	65	62
Antisense	12	23	19
Avita	13	43	57
Benitec	14	17	17
Bioniche	151	63	69
Cellmid	9	6	6
Circadian	32	23	23
Compumedics	18	13	12
Ellex	17	16	16
Genera	16	13	13
Neuren	7	28	29
Optiscan	6	18	18
Patrys	29	13	12
Phosphagenics	91	204	244
Prana	61	44	48
Psivida	83	21	40
Reva	411	166	215
Uscom	15	5	5
Viralytics	25	28	29

\* Biotech Daily editor, David Langsam, owns shares in Alchemia, Allied Health, Biota, Neuren, Pharmaxis and non-biotechnology stocks. Through Australian Ethical Superannuation he has an indirect interest in Atcor, Avita, Circadian, Pharmaxis and QRX. These holdings are liable to change.

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