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In this edition...
QRxPharma has signed a letter of intent to form what can be considered a very balanced deal for both the licensor and licensee, Actavis. It arguably sets a new standard for creative deal design in the Australian biotech landscape. Its final major obstacle is FDA approval, with a decision expected in June next year.
Clinuvel Pharmaceuticals is ready to file its drug candidate for approval in Europe. This stock deserves a lot more attention than it's getting.
And we provide our Top 6 Stock Picks for 2012 and look at how we went in 2011.
The Editors
Companies Covered: CUV, QRX, 2012 Stock Picks

	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 - May '09)	-7.3%
Year 9 (May '09 - May '10)	49.2%
Year 10 (May '10 - May'11)	45.4%
Year 11 now commenced	-27.3%
Cumulative Gain	**206%**
Av. annual gain (10 yrs)	**21.2%**

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Bioshares

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Edition 438

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

QRxPharma Cuts Creative Deal with Actavis for MoxDuo

QRxPharma (QRX: $1.53) has signed a binding letter of intent in which QRxPharma will license MoxDuo IR to global generic firm Actavis for the territory of the USA.

Actavis will now pay QRxPharma an upfront payment of US$6 million. During the launch phase, Actavis will pay royalties of 10% up to 30% depending on net sales thresholds. Then, from a point commencing between three and six months post launch, QRxPharma will receive 50% on cumulative sales up to US$150 million. Once the US$150 million sales threshold has been reached, the royalties will revert to 10% up to 30% depending on net sales thresholds

QRxPharma has retained a co-promotion, profit share option, entitling it to at anytime after 12 months of the launch to manage up to 25% of the sales effort.

Actavis has been provided an incentive through an option to negotiate the rights to MoxDuo CR, which is dependent on certain sales milestones for MoxDuo IR being achieved. An option to also negotiate rights to MoxDuo IV expires on January 31, 2013.

The final date for completion of the deal is March 15, 2012, in which sales forecasts, co-promotion matters and product supply details will be finalized.

The deal covering MoxDuo IR leaves other territories open for licensing by QRxPharma.

Cont'd over

MoxDuo IR
QRxPharma has developed the pain relief drug Moxduo IR, a fixed 3:2 ratio of morphine and oxycodone. The drug has developed in four different formulation strengths: 3mg/2mg, 6mg/4mg and 12mg/8mg and 24mg/16mg.

The company completed its submission of a New Drug Application with the US FDA in August 2011, with the FDA granting a PDUFA date, i.e. a final decision date, of June 25, 2012.

In clinical trials, MoxDuo IR has shown to reduce nausea, vomiting and dizziness by 50-75%, compared to equivalent doses of morphine and oxycodone.

QRxPharma is using the 505(b)2 pathway to gain US regulatory approval. Using the 505(b)2 means a company can make reference to existing safety and efficacy data relating to an approved pharmaceutical product and thereby avoid repeating clinical studies that are required for NDAs for new chemical entities. In general, under a 505(b)2 pathway, a drug sponsor will demonstrate comparability of its drug candidate to the reference product.

Actavis and its Motivation

Actavis is a privately held European generic medicines company which employs 10,000 people globally, with headquarters in Zug, Switzerland. It is the fourth largest generic medicines company in the world, with latest annual sales of €1.8 billion . Actavis was founded by a group of pharmacists in Iceland in 1956 but has grown to its present position in the global market through a string of acquisitions, commencing with Balkanpharma Bulgaria in 1999. Its US exposure was boosted by its acquisition of the human generics business of Alpharma in the US in 2005

Actavis also manages a branded products unit and sells the opioid pain drug Kadian (morphine sulfate extended release capsules).

Kadian was originally developed by F H Faulding. Kadian went off patent in November 2011. Sales of Kadian for the 12 months ending September 30, 2011 totalled US$275 million. Actavis has grown Kadian's market share from 2.5% of the long acting opioid market to 3%, since it acquired Kadian from King Pharmaceuticals in 2008.

Other opioid drugs in Actavis' pain drug portfolio include formulations of oxycodone, oxymorphone and fentanyl.

Manufacturing Capability

Actavis has been a manufacturer of opioid pain drugs in the US since its acquisition of the generics business of Alpharma. It manufactured Kadian for King Pharmaceuticals until King was forced to divest Kadian in 2008 to satisfy US Federal Trade Commission rules. MoxDuo IR is currently manufactured under contract by DSM for QRxPharma. However, the possibility now exists for Actavis to become a second manufacturer for MoxDuo IR.

Actavis sees the potential for significant sales for MoxDuo IR. The CEO of Actavis, Claudio Albrecht, said that the alliance with QRxPharma "represents a major step in our strategy to further strengthen our position as one of the major players in the segment of pain management in the US." Actavis expects to increase the number of sales personnel dedicated to sales of its branded pain products from 60 to 100.

QRxPharma's illustrative figures on potential revenues are that peak sales of US$680 million per year could be generated, assuming that 50% of the relevant market is targeted, that 5% market share is captured and that a $112 selling price per two week prescription is achieved.

The analgesics market is in the process of a shake-up following the FDA's decision to restrict high dosage forms of drugs which include acetaminophen, a decision affecting at least 100 million scripts per annum. This phase out (to be completed by early 2014) may bias the potential income available over time to QRxPharma and Actavis to even higher levels. The FDA's decision is a consequence of liver toxicity issues with high dose forms of acetaminophen.

Therefore, it would appear that Actavis is a highly motivated strategic partner for QRxPharma, with its interest driven by, we would suggest, a decline in sales of Kadian offset by potentially sizeable revenues from MoxDuo IR.

Summary of QRxPharma - Activis Strategic Partnership

Status	Binding Letter of Intent
Final Date for Completion	15-Mar-12
Details to be Completed	Sales forecasts, co-promotion, order of management, product supply
Product	MoxDuo IR
Dose forms	3mg/2mg; 6mg/4mg; 12mg/8mg; 24mg/16mg
Indications	Moderate to severe acute pain
Territory	USA

Payments

Upfront	US$6 M
Milestones	None

Royalties

Launch phase	10% up to 30% depending on net sales thresholds
Premium phase	50% on cumulative sales to US$150 M
Established phase	10% up to 30% depending on net sales thresholds

Other

Manufacturing	Activis may serve as a manufacturer
Options	Activis has option to negotiate rights to MoxDuo CR [contingent on sales milestones] and MoxDuo IV [expires 31-Jan-2013]

QRxPharma retains

	RoW Rights
	Co-promotion, profit share-right to manage up to 25% of sales effort [Period: Anytime after 12 months following launch]

Other Information

FDA PDUFA Date	June 25, 2012

Risks Ahead

FDA Decision

The FDA has set a PDUFA action date for MoxDuo of June 25, 2012. The company has been following a 505(b)2 approval pathway for MoxDuo IR which has a lower threshold for approvability than for new chemical entities.

However, an area of concern for opioid medicines is to what extent the FDA imposes Risk Evaluation and Management Strategies (REMS) for opioid and other Class II pain medicines. REMS have the potential to slow development and increase selling and marketing costs for pharmaceutical companies.

Cont'd on page 5

2012 Top 6 Stock Picks

Pharmaxis (PXS: $1.04)

Pharmaxis' development of Bronchitol has been a long, hard road. The company expects to start selling its cystic fibrosis drug in Europe in the first half of 2012 through its contract sales force.

Pharmaxis has been sold down 75% over the year following the initial rejection from the European drug regulator. That opinion was eventually reversed but its share price continues to dwindle around the $1 mark. The company resolved its funding issue, raising $80 million. It is now properly resourced to begin selling Bronchitol for CF in Europe

We expect the company will file Bronchitol for approval in the US in the first half of 2012. We expect the regulatory process will run more smoothly for the company in the US than in Europe.

Pharmaxis is capitalised at $318 million.

Cogstate (CGS: $0.24)

Cogstate is having its best half year result on record courtesy of its clinical trials cognitive testing business, with a solid profit for the first half expected. It has two other applications for its technology; in concussion management in sport, and also as a dementia screening tool. The company is currently in discussions with pharmaceutical companies about licensing the technology for dementia screening.

As of 8 December, the company had secured sales of $9.27 million for the current financial year, 27% more than the whole of the previous year. It had $3.2 million in cash at the end of September. It has worked hard to reduce its cost base over the last year, which should support a very good profit result this year.

Cogstate is capitalised at $16 million.

Universal Biosensors (UBI: $0.77)

Universal Biosensors is down 53% from its 12 month high and is now capitalized at only $122 million. It has two quality partnerships, one with Lifescan (J&J) for its new glucose monitoring system, and one with Siemens, for the development of a point-of-care coagulation test for warfarin therapy (PT/INR test).

The glucose strips are now being made by Universal Biosensors and are being sold into Europe, Australia and Canada by LifeScan. Approval has been received for the US although the product has yet to be launched in that region.

In the nine months to the end of September, the company had received $14.3 million from sales of the strips, from manufacturing the strips, from providing R&D services and from milestone payments. It had $18.8 million in cash at 30 September.

The second product application, PT/INR, will be sold into a market worth $400 million. It will be a much higher margin product for Universal Biosensors. Its partner, Siemens Healthcare Diagnostics, has over 30,000 customers worldwide.

UBI is a Tier-1 company that has fallen to very attractive levels.

Alchemia (ACL: $0.31)

After a decade or more of development it is finally the time to see some Australian biotechs enjoy the fruits of their labour. Alchemia's generic drug fondaparinux has reached the market this year. It has secured just 10.5% of the fondaparinux market, which was worth US$338 million in FY2011.

The company is, with its manufacturing partner Dr Reddys, working on improving its production yields to satisfy the US market. It is aiming for a 30% market share, which should see the company generate a profit share we estimate of $25-$30 million a year.

Alchemia also has an oncology business. Its lead candidate, HA-Irinotecan, will shortly move into a Phase III trial in 390 patients with colorectal cancer. Alchemia has recently raised the funds to allow it to proceed with this trial. If this trial is successful, then it will also support the continued development of the HyACT platform, which combines hyaluronic acid with other cancer drugs to improve tumour cell targeting. Alchemia plans to spinout its oncology business. Alchemia is capitalised at $79 million.

Clinuvel Pharmaceuticals (CUV: $1.55)

Clinuvel Pharmaceuticals is now ready to file its drug candidate, Scenesse, for marketing approval with European regulators. The first indication will be for the treatment of EPP, a severe sunlight intolerance disorder.

It should get a decision from the regulator during 2012. Although EPP is a small orphan disease market – we estimate that sales of $85 million a year are achievable – that market is well informed about the Clinuvel's progress and direct selling of this product is an option for Clinuvel.

After EPP, there are larger markets for Clinuvel to address, the most important being vitiligo. That market could be worth $400 million a year. However, to gain approval for that indication may require trials in over 1,000 subjects.

Clinuvel is capitalised at only $46 million. It had cash and investments of $14.6 million at the end of September and will either need to raise funds in 2012 or find a licensing partner.

QRxPharma (QRX: $1.53)

QRxPharma has signed a binding Letter of Intent (LOI) with Actavis to license its pain drug candidate, MoxDuo IR, for the US. Rest of world rights have been retained by QRxPharma at this stage.

QRxPharma is expecting the FDA to consider its drug application by 25 June 2012. QRxPharma also has a sustained release and an intravenous versions of MoxDuo in development.

QRxPharma had $32 million in cash at the end of September but will receive US$6 million from the signing of the LOI. QRxPharma is capitalised at $221 million.

Bioshares

Clinuvel Pharmaceuticals – Positive Phase III Results & Ready to File

Clinuvel Pharmaceuticals (CUV: $1.55) has cleared a final clinical stage and is now ready to file its drug candidate for erythropoietic protoporphyria (EPP), Scenesse, for marketing approval with European regulators. EPP is characterised by a severe intolerance to sunlight.

Its European Phase III trial enrolled 74 patients with 68 completing the trial, which is a very good completion rate. Patients received either a placebo or the Scenesse depot injection every 60 days for nine months. The results were excellent and are as follows. Note a probability value (p-value) less than 0.05 is considered statistically significant and is the main gauge of success when considering efficacy.

1. Half as many phytotoxic reactions in the Scenesse arm over placebo (p=0.044)
2. The Scenesse group had lower total median pain score (p=0.035)
3. A total lower maximum pain score per reaction to sunlight over placebo (p=0.018)
4. Patients on Scenesse were able to spend more time in the sun (p=0.005), up to seven times longer on most days without pain, and
5. There was an improvement in quality of life at 120 days (p=0.005) and at 270 days (p=0.011).

In the countries where compassionate use of the drug could be offered (Holland, Finland, France and Germany), around 90% of patients requested and have been provided continuation of treatment after the trial.

From a safety aspect, the side effects were minor, including injection site bruising, nausea, headache and the common cold. Scenesse has now been given to over 600 people with no serious side effects.

CEO Philippe Wolgen said the results were the best yet achieved and were clinically relevant. Scenesse has orphan drug status for EPP with both European and US regulators. This status offers 10 and seven years respectively market exclusivity in those regions.

Clinuvel will likely file in Europe for approval in early January, with a decision expected from the regulator likely in the second half of 2012.

US Regulatory Path

At the start of November, the company announced results from a Phase II US study in 77 patients with EPP. Similarly positive results were achieved in that trial. Clinuvel will now meet with the FDA to discuss the structure of its Phase III US trial in EPP, which may be a trial similar in size to its Phase II US trial.

Phase II Organ Transplant Patient Trial

People who have undergone an organ transplant are forced to take immune rejection medication to ensure their new organ is accepted by their body. However lowering the immune system exposes people to other diseases, including skin cancers.

A total of 85 patients have been enrolled in this 18 month study. The trial is being conducted in Europe and in Australia. The company released some 12 month last week.

To date no significant safety issues have been recorded. Organ transplant patients have a 250 times increased chance of developing skin cancer compared to the overall population. Only a low rate of skin cancers have been reported in this trial with no melanomas.

Side effects included abdominal pain and fatigue, which had not been reported with previous trials, and headaches, nausea and vomiting. The patient population is a high risk group and that no serious side effects emerged was a very good result. According to Wolgen, its positive that Scenesse does not interfere with the patients' immune suppression treatment and that it does not effect the transplanted organ.

Summary

Clinuvel has delivered more positive results and is now ready to file its drug for regulatory approval. Clinuvel is a stock that has been overlooked by investors for a lengthy period. Commercial validation from a licensing deal or in gaining European approval will be major drivers for this stock, with both a possibility for 2012. One aspect that the company will have to address next year is its cash position, with only $14.6 million in cash and investments at the end of September.

Bioshares recommendation: **Speculative Buy Class A**

Bioshares

Company	Price (current)	Price added to portfolio	Date added
QRxPharma	$1.53	$1.66	October 2011
Mayne Pharma Group	$0.390	$0.435	September 2011
Genetic Technologies	$0.11	$0.18	August 2011
Acrux	$2.84	$3.37	June 2011
Bioniche	$0.65	$1.35	March 2011
Somnomed	$0.93	$0.94	January 2011
Phylogica	$0.038	$0.053	September 2010
Biota Holdings	$0.80	$1.09	May 2010
Tissue Therapies	$0.39	$0.21	January 2010
Atcor Medical	$0.08	$0.10	October 2008
Impedimed	$0.55	$0.70	August 2008
Bionomics	$0.60	$0.42	December 2007
Cogstate	$0.24	$0.13	November 2007
Sirtex Medical	$4.35	$3.90	October 2007
Clinuvel Pharmaceuticals	$1.55	$6.60	September 2007
Pharmaxis	$1.04	$3.15	August 2007
Universal Biosensors	$0.77	$1.23	June 2007
Alchemia	$0.310	$0.67	May 2004

Portfolio Changes – 23 December 2011

IN:
No changes

OUT:
No Changes

According to QRxPharma, the FDA has not requested a REMS plan. Nevertheless, there is a risk that the FDA will not approve MoxDuo IR (which we rate as unlikely) or that the FDA will impose conditions on the drug (which is a small possibility, but less likely).

Selling Price
A second risk area for MoxDuo IR is selling price and selling price sensitivities, in which payors will press for discounts on MoxDuo.

Launch Date
There is always the risk that the anticipated launch date of a newly approved drug will be delayed. Actavis expects to begin selling MoxDuo IR in the third quarter of 2012.

Summary

The QRxPharma deal with Actavis is correctly described as a strategic partnership. QRxPharma has chosen to bias the deal towards the backend, by seeking higher royalties rather than seeking larger upfronts. However, a sales related royalty rate has the potential to deliver a sizeable payment early on, of US$75 million, to QRxPharma.

From a strategy perspective, QRxPharma has lined up a partner that also has the ability to market MoxDuo IR in other territories, and for that same partner to also be a potential licensee for MoxDuo CR and MoxDuo IV.

The other plank of QRxPharma strategy is that it has written itself an option to take on some of the marketing of MoxDuo IR and then share in profits and royalties. QRxPharma has also lined up a partner with expertise in selling generic products, bringing knowledge of commercial tactics and strategy behind the marketing efforts for MoxDuo IR.

QRxPharma's objective, as revealed in its strategy, is that it wants to create and expand opportunities for its MoxDuo franchise, rather than accept deal terms that companies are forced to accept for immediate-term cash flow reasons.

Although there are several risks outstanding with the MoxDuo IR product including the gaining of approval by the FDA in June 2012, the deal with Actavis has meant that the risk profile of the company has decreased while the reward profile has been considerably bettered.

QRxPharma is capitalised at $221 million.

Bioshares recommendation: **Speculative Buy Class A**

Bioshares

2011 Stock Picks Assessment

2011 Stock Picks Performance

Company	Code	Price 14-1-2011	CMP	Change
Alchemia	ACL	$0.73	$0.31	-58%
Bionomics	BNO	$0.34	$0.60	76%
Biota Holdings	BTA	$1.28	$0.80	-38%
Clinuvel Pharmaceuticals	CUV	$2.14	$1.55	-28%
Pharmaxis	PXS	$3.00	$1.04	-65%
Phylogica	PYC	$0.077	$0.038	-51%
Sunshine Heart	SHC	$0.035	$0.034	-3%
Somnomed	SOM	$0.94	$0.93	-1%
Starpharma Holdings	SPL	$0.84	$1.18	41%
Sirtex Medical	SRX	$6.12	$4.35	-29%
			Average	-15.4%
ASX All Ordinaries Index	XAO	4909	4192	-14.6%

Our Top 10 Stock Picks for 2011 delivered a poor result, achieving an average loss of 15.4%, marginally worse than the All Ordinaries Index, which fell 14.6%, over the same period (from January 14 to Decemver 23.

Pharmaxis was one of the worst performers, falling 65%, largely due to the first pass denial of a European approval for Bronchitol. Alchemia fell also, by 58%, even though it finally got its drug approved. Alchemias was sold down when GlaxoSmithKline announced it would permit an authorised generic, largely cannibalising its own market. Clinuvel fell 28% predominantly due to investor disinterest. However, all three of these stocks have been included in our stock picks for 2012.

Bionomics was the best performer, rising 58%, and then followed by Starpharma, which was up 41%. Both stocks look very solid going into 2012. Biota Holdings was sold down 38% even after its spectacular US$231 million contract with the biodefense agency BARDA was announced. It has been heavily oversold.

Sirtex Medical fell 29% with currency factors playing a role. It is an excellent longer term growth stock. Somnomed continues to track well although its rate of growth may slow, which may explain why its share price has not increased. Sunshine Heart fell only 3% although the company has a hard task ahead to fund its pivotal study.

Phylogica fell 51%, with the market disappointed the company has had to raise more cash and it hasn't met its target of cutting three new deals this year.

Bioshares

We wish all of our subscribers a very enjoyable and safe festive season and a successful year of investing ahead!

Merry Christmas

from

The Bioshares Team

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. For both groups, the rating "Take Profits" means that investors may re-weight their holding by selling between 25%-75% of a stock.

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

Corporate Subscribers: Pharmaxis, Starpharma Holdings, Cogstate, Bionomics, Circadian Technologies, Biota Holdings, Impedimed, QRxPharma, Patrys, LBT Innovations, Mesoblast, Atcor Medical, Tissue Therapies, Viralytics, Phosphagenics, Immuron, Phylogica, Bluechiip, pSivida, Antisense Therapeutics, Benitec BioPharma, Allied Healthcare Group, Genetic Technologies

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