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	Bioshares Portfolio
Year 1 (May '01 - May '02)	21.2%
Year 2 (May '02 - May '03)	-9.4%
Year 3 (May '03 - May '04)	70.6%
Year 4 (May '04 - May '05)	-16.3%
Year 5 (May '05 - May '06)	77.8%
Year 6 (May '06 - May '07)	17.4%
Year 7 (May '07 - May '08)	-36%
Year 8 (May '08 - May '09)	-7.4%
Year 9 (May '09 - May '10)	50.2%
Year 10 (May '10 - May '11)	45.4%
Year 11 (May '11 - May '12)	-18.0%
Year 12 (May '12 - May '13)	3.1%
Year 13 (May '13 - May '14)	26.6%
Year 14 (May '14 - May '15)	23.0%
Year 15 (May '15 - current)	12.4%
Cumulative Gain	522%
Av. Annual gain (14 yrs)	17.4%

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

Extract from Bioshares –

Antibiotic Resistance Remains A Key Thematic For Anatare

Anatare Life Sciences (ANR: \$1.06) has had a stellar run since it listed in October 2014, after raising \$7 million at 50 cents per share. The company added to cash reserves with a \$7 million placement and a \$2 million SPP mid-year. The company is sufficiently funded to see it reach its objective of gaining Australian regulatory approval for its veterinary product, Detach, as an alternative to antibiotics and growth promotants used in the management of piglets, and potentially calves, chickens and farmed seafood. These other target groups will require new formulations of Detach to be developed and tested.

Detach is a protease, similar to trypsin, which digests proteins in the intestine (of pigs). Detach blocks adhesion sites for bacteria which cause diarrhea.

Detach Trials

Detach is currently being evaluated as a treatment for scour (diarrhea) in piglets. Anatare has now completed two randomised trials of Detach in Australia, in both sucker and weaner piglets. It also has results from a 2012 trial conducted in Spain in weaner piglets. (See table on the next page for a summary of results.)

A third Australian trial, in sucker pigs, similar in design to the first sucker trial, is planned for 2016. Results from all the trials will be included in a submission to be made by Anatare to the Australian Pesticides and Veterinary Authority (APVMA) in 2016.

The company is developing Detach as an OTC product with a view to developing a label which describes Detach as product which reduces or aids the control of scour in piglets up to a certain age. The company's OTC strategy is to devise a more general label wording and one which avoids the need for diagnosis prior to administration.

The company's trials have not shown any demonstrable difference to controls or to Zinc Oxide in weight gains. However, the benefits of treating scour in effect are benefits that relate to the raising of more and healthier piglets without recourse to antibiotics.

In Anatare's first Australian trial, in sucker piglets, Detach delivered almost a 50% reduction in deaths and removals (for ill health) compared to the control arm.

In Anatare's second Australian trial, in weaner piglets, Detach effectively reduced scour by 41%. However, somewhat surprisingly there were far fewer instances of deaths in the control arm (4) and none in the Detach arm. A key difference between this second trial and the first trial is that death rates are usually higher with sucker piglets because they are at risk of being crushed by the sow (mother) if they become sick. If piglets are not suckling they also do not benefit from the passive immunity passed on from the mother.

Sucker death rates have a direct impact on profitability, so addressing vulnerabilities in

Cont'd over

sucker pig health is worthwhile. What the first Australian trial in sucker pigs showed was that Detach could significantly lift the productivity of litters, with two extra piglets weaned per litter when Detach was used.

Pre-weaning mortality rates around the world range from 12.6% in Europe to 15.3%. In the USA, the figures range from 8.3% to 29.1%. Post-weaning mortality rates range from 3% in Europe to 6.9% in the USA.

Shift Away From Antibiotic Use

Anatara's Detach is being positioned to benefit from a major global shift away from the use of antibiotics in production animals to approaches which don't have resistance problems, or food chain or excretion issues (into agricultural land and water) associated with antibiotics. This is a key thematic which is likely to sustain interest in the stock both in the short term and the long term.

A recent publication in *The Lancet* on the emergence of resistance in a widely used antibiotic, colistin, has further increased the need for alternatives such as Detach. An EMA study estimated that colistin accounted for 30% of antimicrobials used in treating pigs and 15% of antimicrobials used to treat veal calves. Therefore the limitation of colistin as an antibiotic would have significant consequences for Europe's pork producers.

Milestones 2016

- Commence third Australian field trial
- Sign first partner (Q1 2016)
- Submit dossier to APVMA

Anatara is capitalised at \$41 million and retained \$13.7 million in cash in October.

Bioshares recommendation: **Speculative Buy Class B**

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Summary of Trials of Detach in Piglets

Weaner Piglets

ANR12-001	No. Piglets	No. per Pen	No. Pens	Scour Reduction Compared to Control (to day 19)	Severity of Scour Scores	No. Sick Pigs	Ave Daily Weight Gain (to Day 42)
Zinc Oxide (ZnO)	72	6	12	58% reduction	NA	NA	295 g
ZnO+Detach	72	6	12	52% reduction	NA	NA	297 g
Detach Treated	72	6	12	40% reduction	98	16	301 g
Control (No treatment)	72	6	12	-	253	38	290 g
Findings				No stat. difference in efficacy between the treatment groups		Sig. diff. between Detach and control (p<0.05)	No sig. difference between groups

Location: **Spain** ZnO - daily for 14 days; Detach, single oral dose

Sucker Piglets

ANR14-001	No. Piglets	No. per Litter	No. Litters	Scour (freq)	Severity of Scour Scores	Deaths/ Removals	Ave Daily Weight Gain
Control	229	10	23	NA	NA	36	189 g
Detach Treated	233	11	21	NA	NA	19	199 g
Findings						47.8% reduction in Detach over control (p<0.02)	5.2% gain in Detach over control (not stat. sig.)

Location: **Northern Victoria**

Weaner Piglets

ANR15-002	No. Piglets	No. per Pen	No. Pens	Scour (freq)	Severity of Scour Scores	Deaths/ Removals	Ave Daily Weight Gain
Control	280	14	20	152	173	4	252.1 g
Detach Treated	280	14	20	89	96	0	249.6 g
Findings				41% reduction with Detach over control (p<0.02)	45% reduction with Detach over control (p<0.02)		1% gain with Detach over control (not stat. sig.)

Location: **South Eastern Queensland**

NA - Not Available

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: Cogstate, Bionomics, Impedimed, LBT Innovations, Tissue Therapies, Viralytics, Phylogica, pSivida, Benitec BioPharma, Invion, Imugene, Analytica, Circadian Technologies, Reproductive Health Science, Regeneus, Innate Immunotherapeutics, Anantara Life Sciences, ResApp, Pharmaxis, Starpharma

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