Lodge Partners Research
ABN: 25 053 432 769
AFSL: 246271

BUY	12 Month Target	$0.65
	Price	$0.32
	Implied Return	103%

Paradigm BioPharmaceuticals Ltd

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Nothing to sneeze at

Company Details

ASX Code:	PAR
Price:	32 cents
Shares on Issue:	87.2m
Market Capitalisation:	$27.9m
12-Month Price Range:	25 – 40 cents
Monthly Volume (shares, Apr 16)	926k

Comparable Companies

Company	Enterprise Value[1,2]
Starpharma Ltd (ASX: SPL)	$213.2
Viralytics Ltd (ASX: VLA)	$158.0
Verona Pharma Plc (LON: VRP)[3]	$69.9
Suda Ltd (ASX: SUD)	$21.5
Invion Ltd (ASX: IVX)	$5.3
Paradigm (ASX: PAR)	**$23.7**

[1] Enterprise value = Market capitalisation minus cash
[2] As of 26 May 2016
[3] 1 AUD = 0.4894GBP

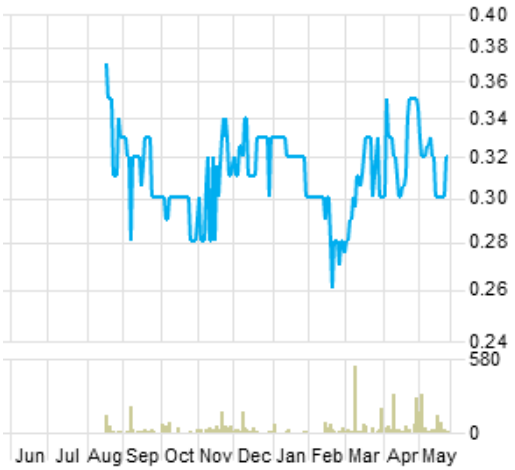
Directors & Chief Executive

Mr Graeme Kaufman	Non-Executive Chairman
Mr Paul Rennie	Managing Director
Mr Christopher Fullerton	Non-Executive Director
Mr John Gaffney	Non-Executive Director

Major Shareholders

Paul Rennie	24.2%
MJGD Nominees	8.1%
Irwin Biotech Nominees	7.8%
Peter Milonas	5.6%
Bill Paspaliaris	5.6%

Share Price Chart



Source: FactSet

Recommendation: Buy rating and 12-month price target of **65 cents** per share maintained.

Event: Paradigm Biopharmaceuticals (ASX: PAR) issued a shareholder update on 25 May, 2016. The update concerns Paradigm's near-term plans for its nasally delivered version of pentosan polysulfate sodium (nPPS, registered name: Rhinosul®), which is being developed for hay fever (allergic rhinitis, AR). The update covered program milestones for the next six months, the design of the phase I & phase IIa trials and the submission for publication of a paper which compares the pre-clinical performance of nPPS to AstraZeneca's Rhinocort®, among other things.

Comment: The next six months will be a very significant period for Paradigm's nPPS product with the following occurring:

- Results from nPPS' toxicology studies
- Submission for publication and likely acceptance of a manuscript covering pre-clinical studies comparing nPPS to budesonide
- The commencement and reporting of the results from a phase I trial
- Preparation for and likely commencement of a phase IIa study

We believe nPPS has compared very well to budesonide in pre-clinical studies, noting that nPPS' theorised ability to treat both the acute and chronic phases of AR should give it an inherit performance advantage over budesonide. The publishing of these results will be an important tool in the partnering discussions to come.

The phase I study is focused on safety and tolerability, and will involve single and multiple doses of nPPS. It will be conducted in a randomised, double blind, placebo controlled fashion. Two dose levels will be studied, with the total number of subjects being 18. We expect the trial to begin in July 2016 and that it will take approximately two months to complete. Given previous clinical and veterinary use of PPS, we believe this trial holds little risk for investors.

A phase IIa study of nPPS in AR is slated to begin in December 2016. This study will be a randomised, double blind, placebo-controlled, crossover study. With a crossover design, the study will have two phases. Those who receive nPPS in the first phase will receive placebo in the second phase and vice versa for those who receive placebo in the first phase. We believe the study will involve 20-40 patients and be of a challenge nature, where those known to suffer from AR are challenged with an allergen and then treated with nPPS or placebo. Due to the nature of the study, this trial can be completed quite quickly and the results should be known in 1H CY17. While this study looks at safety, it also looks at efficacy. As such, this trial carries more risk for investors, than the phase I study (remembering, without risk, there is little return). The design employed in this study has been used frequently by the larger pharmaceutical companies and is well understood by, both, the companies and regulatory agencies.

The net result is that, by this time next year, Paradigm should have a substantial dossier on nPPS in AR, which it can use to meaningfully engage prospective partners in licensing talks.

Conclusion: Paradigm is making excellent progress with its nPPS program and may well have it in a solid licensing position by this time next year. Importantly, the company is also entering a period rich in value-adding milestones, not just for the nPPS program, but for the bone marrow edema program, as well. We expect investor interest in the stock to pick-up going forward, which will provide plenty of support for the company's share price.

Valuation and Methodology

We have valued Paradigm and set our 12-month price target based on the enterprise values (EV) of comparable companies. Table 1 provides an overview of those comparables used in deriving a value for Paradigm. The commonality between the companies is that they are either repurposing an old drug or, more broadly, developing a new product from old technology. Given a slight lack of availability of similar local companies, we have included one overseas company, Verona Pharma Plc (LON: VRP), in our group of comparables. EV has been calculated simply as market capitalisation minus cash, since few of these companies of this nature carry debt and those that do generally only have a small amount. Table 2 outlines the weightings given to each of the comparables and shows how we have derived our 12-month price target from our comparable-derived fair EV of Paradigm. The derived fair EV was multiplied by one (1) plus a discount rate of twelve percent (12%) to determine a 12-month EV target. Paradigm's current cash balance was then added to the EV target and the resultant number (essentially a 12-month market capitalisation target) divided by the number of Paradigm shares on issue to give a **12-month price target of 65 cents per share**.

Table 2. Comparable companies used to determine a fair enterprise value for Paradigm Limited.

Company	Exchange	Ticker	Mkt Cap[1,2]	Cash[1]	EV[1,3]
Starpharma Holdings Limited	ASX	SPL	264.3	51.1	213.2
Viralytics Ltd	ASX	VLA	204.1	46.1	158.0
Verona Pharma Plc[4]	LON	VRP	77.1	7.2	69.9
Suda Ltd	ASX	SUD	25.1	3.6	21.5
Invion Ltd	ASX	IVX	6.2	0.9	5.3

[1]Million AUD; [2]As of 26 May 2016; [3]EV = Enterprise Value = Market Capitalisation minus Cash; [4]1 AUD = 0.4894 GBP

Company	Overview
Starpharma Holdings Ltd	Commercialising an old technology of synthetic branching polymers (dendrimers). Lead product VivaGel® is in phase III trials for the prevention of bacterial vaginosis (BV), approved to provide symptomatic relief of BV in Europe and is used as a coating on Ansell condoms. Starpharma's dendrimers-based DEP™ drug delivery platform has been licenced to AstraZeneca for multiple programs (first product returns USD126m in milestones plus royalties; subsequent programs deliver USD93m in milestones plus royalties). Starpharma has multiple oncology focussed DEP™ programs, the most advanced of which is in phase I trials. Finally, Starpharma has a dendrimer-based technology, termed, Priostar®, designed to enhance the performance/activity of agrochemicals. It has several internal programs based on the technology (e.g. glyphosate), as well as several programs partnered with agrochemical companies.
Viralytics Ltd	Principally focussed on developing CAVATAK™ (naturally occurring cocksackievirus 21) as an anticancer immunotherapy. CAVATAK™ has completed a phase II study in melanoma. It is in a further four phase 1b studies: One a collaboration with Merck & Co. in lung and bladder cancers in combination with Keytruda (pembrolizumab, Merck & Co.); two in melanoma, one combined with Yervoy™ (ipilimumab, Bristol-Myers Squibb) and one combined with Keytruda; and one in superficial bladder cancer.
Verona Pharma Plc	Is almost exclusively focused on commercialising RPL554. It is an old compound co-invented by a former Director of Research at Glaxo. The company believes it has a dual mechanism of action relevant to respiratory diseases, acting as an anti-inflammatory agent and a bronchodilator. Previous attempts aimed at the targets of RPL554 have failed for safety reasons. It is in a phase II trial for chronic obstructive pulmonary disease, a phase II trial in asthma and a phase I trial in cystic fibrosis is planned.
Suda Ltd	Suda is reformulating a number of standard of care tablet into oral sprays using its in-licensed OroMist® technology. Suda licensed ZolpiMist® (OroMist® delivered zolpidem) for insomnia post-FDA approval and have, at least, five more generic drugs at various stages of being combined with the OroMist® technology.
Invion Ltd	Invion's lead product is oral INV102 (nadolol). Nadolol is a generic drug used in the treatment of hypertension and chest pain and Invion is repurposing the drug for smoking cessation, where it has completed a phase II trial, and asthma, where enrolment for an n=66 phase II trial has been completed. Invion envisages developing inhaled versions of INV102 for asthma, COPD and cystic fibrosis. INV104 is a program aimed at reformulating the oral drug zafirlukast into an inhaled form and is next expected to enter preclinical toxicology studies. INV103 (ala-Cpn10) is in a phase II studies for lupus and is a legacy asset from when Invion was known as CBio.

Table 3. Comparable weightings and Paradigm Biopharmaceuticals Limited price target calculation.

Comparables	Weighting (%)
Starpharma Holdings Ltd	5.0
Viralytics Ltd	5.0
Verona Pharma Plc	30
Suda Limited	25
Invion Limited	35

Price Target Calculation	
Present Estimated PAR EV	**$46.8m**
Discount Rate	12.0%
12-Month Estimated PAR EV	$52.4m
12-Month Estimated PAR Mkt Cap	$56.6m
12-Month Price Target	**$0.65**

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Recommendations are assessments of each Lodge Partners Analyst's view of potential total returns over a 1 year period.

Expected total Return is measured as (capital gain (or loss) + dividend)/purchase price

We have divided our recommendations into three main categories:

Buy: Expected Total Return in excess of 15% over a 1 year period.

Hold: Expected Total Return between 0% and 15% over a 1 year period.

Sell: Expected Total Return less than 0% over a 1 year period.

Analyst Verification

I verify that I Marc Sinatra, have prepared this research report accurately and that any financial forecasts and recommendations that are expressed are solely my own personal opinions. In addition, I certify that no part of my compensation is or will be directly or indirectly tied to the specific recommendation or financial forecasts expressed in this report.

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