

**ASX Limited
Market Announcements Office**

Updated Non-Confidential Presentation to support CEO Partnering meetings starting 11 February 2019

7 February 2019, Melbourne: Australian drug delivery company, Phosphagenics Limited (ASX: POH) released today an updated non-confidential presentation to accompany overseas meetings to be undertaken by Dr Ross Murdoch, CEO & Managing Director from 11th to 22nd February 2019. In addition to a number of business meetings with present and potential partners, Dr Murdoch will also meet with brokers, investment bankers and potential investors.

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About Phosphagenics

Phosphagenics Limited is focused on developing and commercialising innovative Human Health, Animal Health and Personal Care products using its proprietary drug delivery system called TPM[®] (Targeted Penetration Matrix). TPM[®] is derived from Vitamin E using a unique, proprietary and patented processes and has been proven to enhance the solubility and oral, dermal and transdermal absorption of drugs and nutrients.

Amongst its major projects, Phosphagenics' is delivering TPM[®] enhanced patches, gels and injectable products for the human health market and is also developing TPM[®] to enhance the feed efficiency and health of livestock.

Phosphagenics' shares are listed on the Australian Securities Exchange (POH).

Inherent Risks of Investment in Biotechnology Companies

There are a number of inherent risks associated with the development of pharmaceutical products to a marketable stage. The lengthy clinical trial process is designed to assess the safety and efficacy of a drug prior to commercialisation and a significant proportion of drugs fail one or both of these criteria. Other risks include uncertainty of patent protection and proprietary rights, whether patent applications and issued patents will offer adequate protection to enable product development, the obtaining of necessary drug regulatory authority approvals and difficulties caused by the rapid advancements in technology.

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Forward-looking Statements

Certain statements in this announcement may contain forward-looking statements regarding Company business and the therapeutic and commercial potential of its technologies and products in development. Any statement describing Company goals, expectations, intentions or beliefs is a forward-looking statement and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the process of discovering, developing and commercialising drugs that can be proven to be safe and effective for use as human therapeutics, and in the endeavour of building a business around such products and services.

www.phosphagenics.com



February 2019

Phosphagenics: Non-confidential Presentation

www.phosphagenics.com
(ASX : POH)



Safe Harbour Statement

This presentation, and any representations made before, during or after the presentation, may include forward-looking statements that are inherently subject to risks and uncertainties. These statements relate to, but are not limited to: (1) the safety or efficacy of, or potential applications for, Phosphagenics' TPM® platform technology; (2) the strength of Phosphagenics' intellectual property; (3) the timelines for Phosphagenics' clinical trials and regulatory processes for its different products; (4) the scalability and efficiency of manufacturing processes; (5) revenue projections, market share expectations, share price expectations and capital requirements.

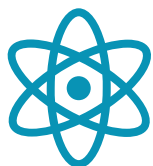
Actual results may differ from the expectations expressed in these forward-looking statements, and the differences may be material (whether positive or negative). The risks that may cause Phosphagenics' actual results, performance or achievements to be materially different from those expressed or implied by such forward-looking statements, include but are not limited to: (1) risks inherent in the development, approval and commercialization of potential products; (2) uncertainty of clinical trial results or regulatory approvals or clearances; (3) changes to market trends or government laws or regulations; (4) the potential need for future capital; (5) dependence upon collaborators; and (6) protection of intellectual property rights, among others. Accordingly, you should not place undue reliance on these forward-looking statements.

Mission

To become a leading biopharmaceutical company, utilising our TPM[®] delivery technology to develop innovative therapeutics that address unmet medical needs and enhance patients' quality of life.



A snapshot of Phosphagenics



- **TPM[®]** is a proprietary solubilisation / drug delivery technology combining multiple forms of Vitamin E (protected by **13+ patent Families**)
- Result of 15+ years R&D and over **\$100M investment**

- Pipeline of **TPM[®] injectables** with enhanced usability characteristics
- TPM[®] patch & gel products with enhanced delivery characteristics
- Additional products targeting **lucrative markets** beyond Human Health



- **12mths cash** (1 Jan'19), **no debt** and **\$100M+ tax losses**
- **Recurring annual revenues** (from manufacturing): \$1M+/year
- Benefit of Australia's R&D incentive (**43% rebate**) for applicable R&D

- **Experienced** international management team and Board of Directors
- Global **partnerships** providing additional funding and expertise



Experienced Management & Board with strong track record of success



Greg Collier, Chairman & Independent Director

- 20+ yrs experience; current CEO Invion (ASX: IVX)
- Previous: CEO of ChemGenex (sold to Cephalon for \$200M+)
- 150 peer reviewed publications, 33 patents, Roche Award for Excellence



Melanie Leydin, CFO & Company Secretary

- 23 years experience in accounting.
- Member of the Institute of Chartered Accountants.
- A registered Company Auditor.
- Director/founder Leydin Freyer



Ross Murdoch, CEO & Managing Director

- 25+ yrs experience; joined Phosphagenics in 2015
- Previous: SVP Shire Pharmaceuticals, President & COO Prana Biotechnology
- PhD in Clinical Pharmacology, University of Melbourne



Paul Gavin, CSO

- 15+ yrs with Phosphagenics; an inventor of the TPM® platform technology
- Responsible for all Research & Development at Phosphagenics
- PhD in Biochemistry & Molecular Biology, Monash University



David Segal, Non-Executive Director

- 30+ yrs experience as a stockbroker
- Shareholder of Phosphagenics since 1999 (when known as Vital Capital)
- Previous: Investor Relations manager of Phosphagenics



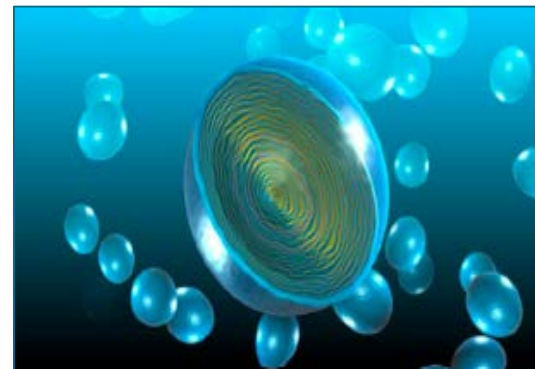
Roksan Libinaki, GM Animal Health & Production

- 15+ yrs with Phosphagenics, managing R&D programs focused on improved oral bioavailability and/or efficacy of nutrients and drugs
- Responsible for the manufacture of TPM and Vital-ET
- PhD in Biochemistry & Molecular Biology, Monash University



TPM[®] is at the core of Phosphagenics

“...Phosphagenics invented, developed, patented and is the sole global manufacturer and supplier of TPM[®] ...”

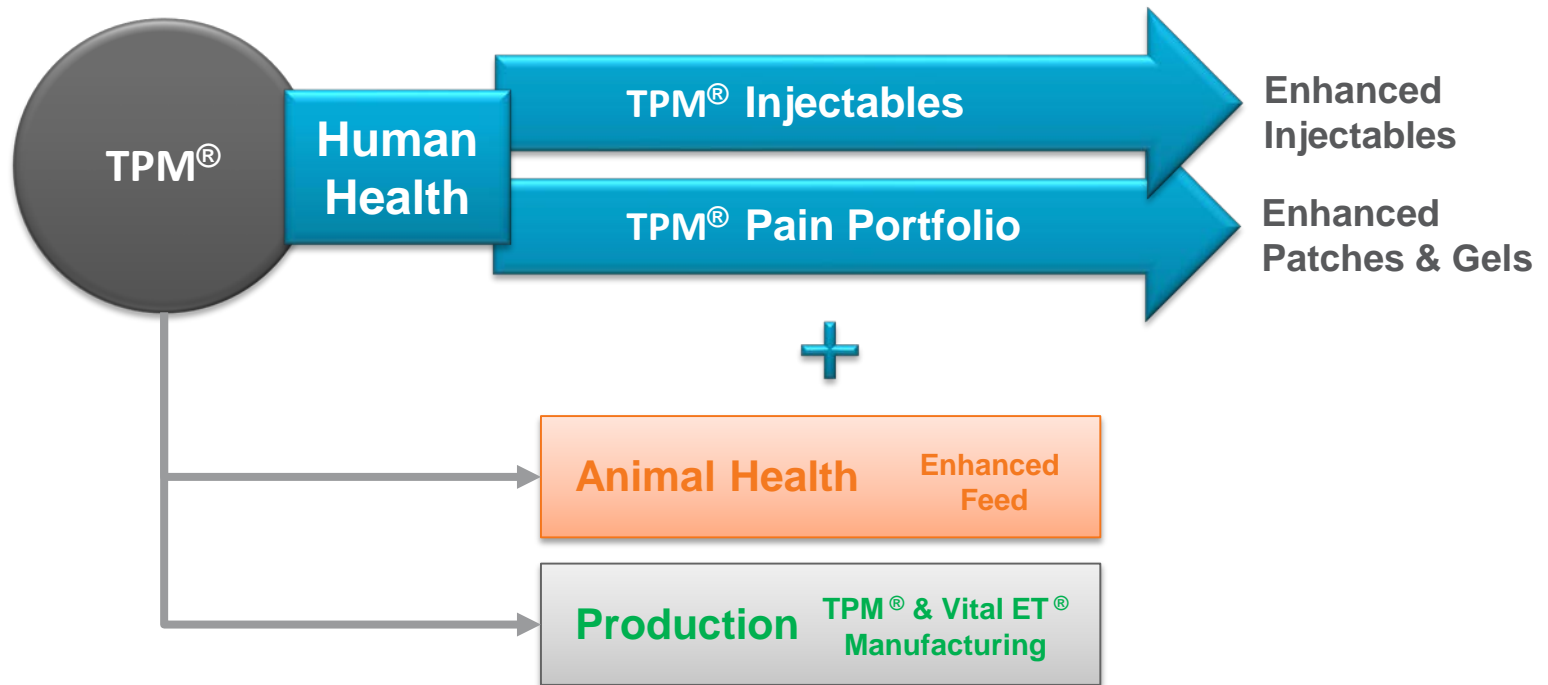


TPM[®] :

- proprietary combination of 2 forms of phosphorylated Vitamin E (in specific ratio)
- highly flexible technology
- improves drug solubility and stability to enhance injectable products
- enhances transdermal drug delivery and oral bioavailability
- excellent safety profile
- protected by over 100 patents across 13+ families
- Manufactured in Phosphagenics' Melbourne Facility

TPM® is flexible and has broad applicability

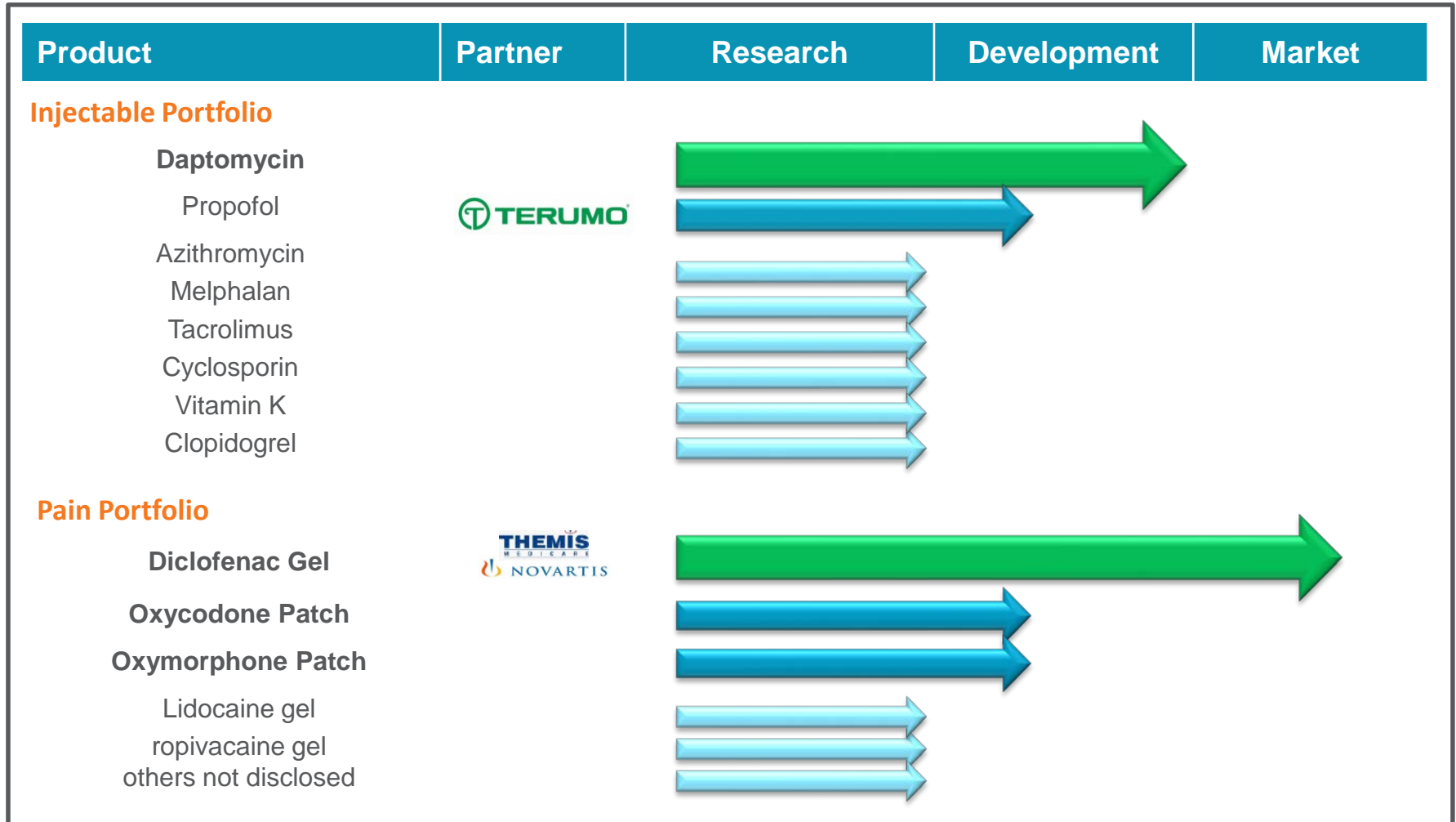
Phosphagenics' focus is Human Health, but....



...it leverages TPM®'s flexibility and unique properties, data and broad patent portfolio to build value across multiple lucrative markets

Phosphagenics Human Health TPM® Portfolio extends across Enhanced Injectables and Pain :

Human Health Business





Phosphagenics TPM® Portfolio also extends into Animal Health:

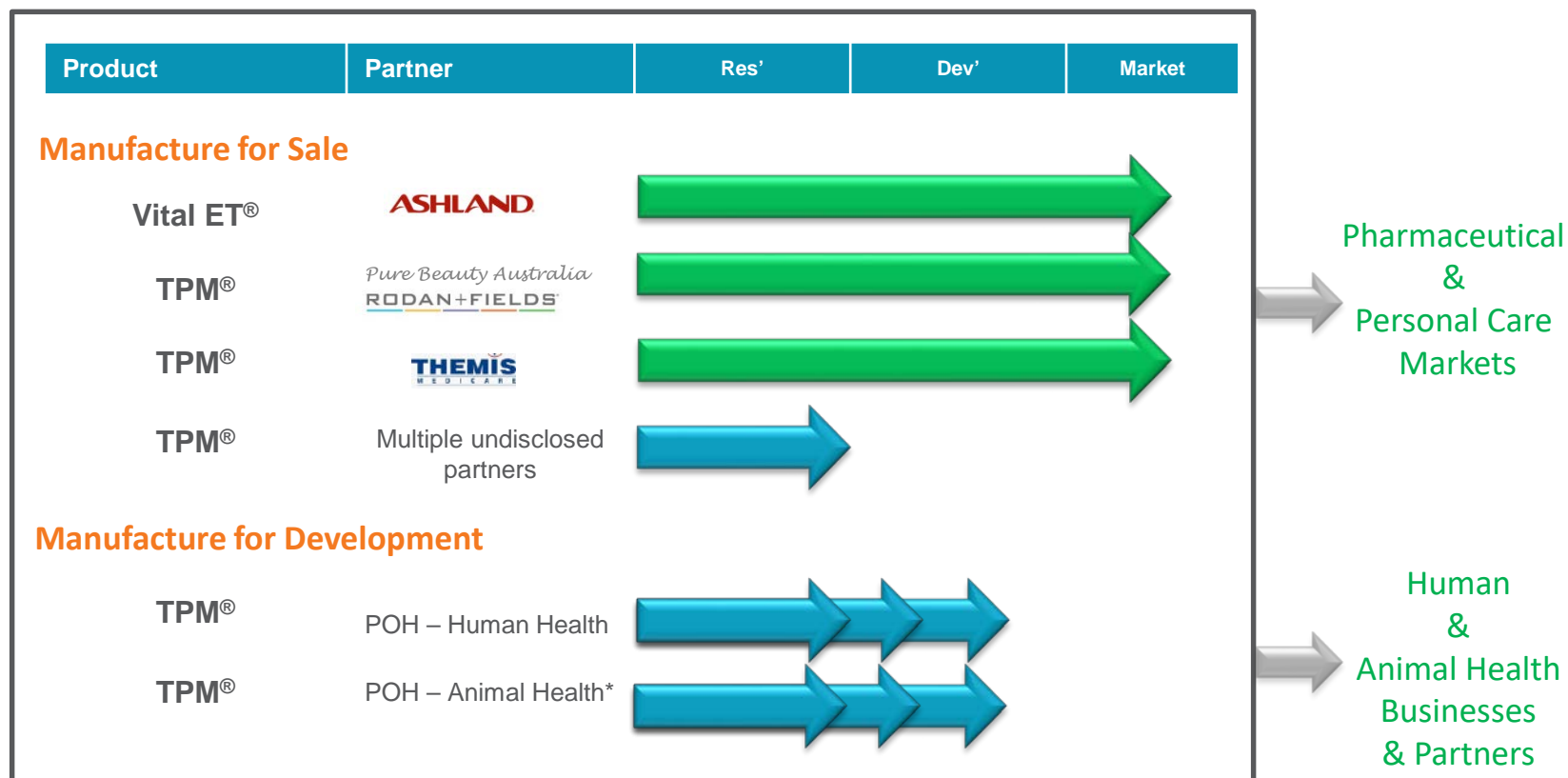
Animal Health & Nutrition Business

Product	Partner	Research	Development	Market
Pig, Poultry, Feed efficiency Cattle mastitis & fertility				
Veterinary				
Aquaculture				
Companion animal				



Phosphagenics Production Business manufactures and sells TPM[®] and Vital-ET[®]

Production Business



* Manufacturing capacity (50,000kg/yr) been scaled to supply future, large animal health orders



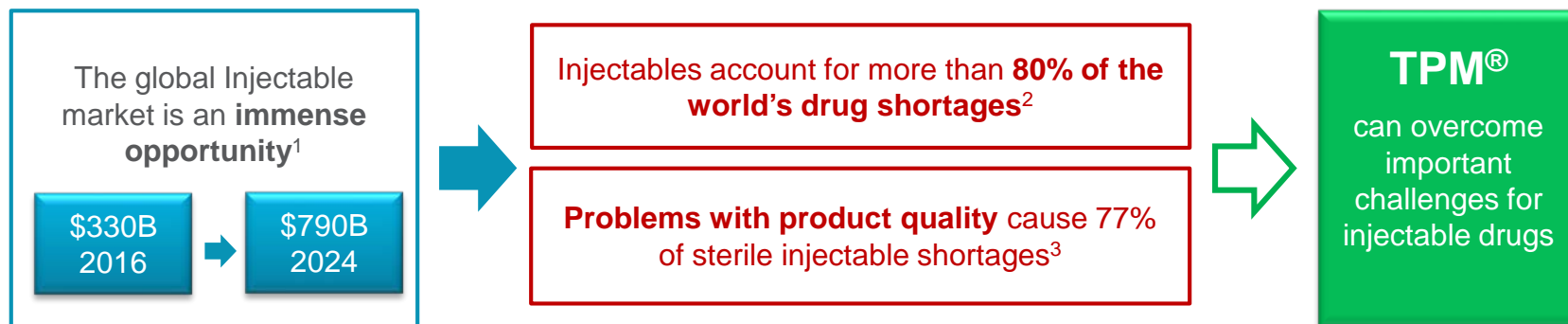
Injectable Portfolio

Pain Portfolio

Animal Health

Production

TPM[®] can overcome key challenges for injectable drugs



	CHALLENGES	TPM [®]
Manufacturing	<ul style="list-style-type: none">• Complex, toxic or allergenic excipients• Unstable formulation needing lyophilisation• Drugs too unstable to be an injectable	<ul style="list-style-type: none">• A safer and more natural excipient• Improve stability reducing need to lyophilise• Allows previously unsuitable drugs to be injectable
Supply Chain	<ul style="list-style-type: none">• Need for 'Cold chain' to maintain stability• Reconstitution of lyophilised powders	<ul style="list-style-type: none">• Reduce 'cold chain' by improving RT* stability• Speed up reconstitution of lyophilised drugs
Clinical Use	<ul style="list-style-type: none">• Allergenic or toxic excipients• Post reconstitution stability, single use only• Incompatibility with injectable formulations	<ul style="list-style-type: none">• Replace problem excipients• Increase stability of reconstituted drugs – potentially allowing multi-use products• Enable injectable formulation

¹ www.researchandmarkets.com; "Global Injectable Drug Delivery Market Analysis, Companies Profiles, Size, Share, Growth, Trends and Forecast to 2024"

² IMS Study Reveals Drug Shortages in U.S. Disruptive Yet Narrowly Concentrated, IMS Institute for Healthcare Informatics, Nov. 14, 2011

³ www.ncsl.org/research/health/drug-shortages-preserving-the-drug-supply.aspx

* RT: room temperature

“Injectable” assets are fast and profitable



TPM allows:

- Lyophilized to Liquid
- Replacement of toxic excipients
- Improved stability, clarity & reconstitution
- Improved formulation safety & tolerability
- 1st /novel Injectable forms

TPM COGS allows:

- improved / reformulated 505b2 products at Generic pricing
- Compelling sales margin
- Competitive pricing that capture large volume / market share

The Company estimates, based on current sales, that 2030 US Market for Current TPM/Injectable Pipeline could exceed US\$1Billion

Our “TPM[®] Injectable” portfolio is a product of:

- ✓ Over 14 years of R&D
- ✓ \$100M investment
- ✓ Multiple global partnerships

Drug	TPM [®] Advantage	Phase	Development Status	
Daptomycin (Antibiotic)	Reconstitution speed & Stability	POC	Updated development plan under design.	<u>In-house*</u>
Propofol (General Anaesthetic)	Clarity & Excipient toxicity	Toxicology	The partnered formulation: <ul style="list-style-type: none"> Passed 6mth accelerated & 2yr room-temp stability Toxicology initiated. 	<u>Partnered (Japan)</u>
Vitamin K (Coagulation disorders)	Remove toxic excipients	Stability	3 rd Generation formulation: <ul style="list-style-type: none"> 6mth accelerated & room-temp stability complete. 	<u>In-house</u>
Clopidogrel (Anti Coagulant)	1 st feasible injectable form	Stability	1 st Generation formulation <ul style="list-style-type: none"> Passed 6mth room-temp stability 	<u>In-house</u>
Azithromycin (Antibiotic)	Lyophilized to Liquid	Stability	1 st Generation formulation <ul style="list-style-type: none"> Passed 6mth 2-8°C stability. 	<u>In-house</u>
Melphalan (Cancer (myeloma))	Lyophilized to Liquid	Stability	1 st Generation formulation <ul style="list-style-type: none"> Passed 6mth room-temp stability. 	<u>In-house</u>
Tacrolimus (Immunosuppressant)	Remove toxic excipients	Stability	2 nd Generation formulation: <ul style="list-style-type: none"> 2mth accelerated and room-temp stability complete. 	<u>In-house</u>
Cyclosporine (Immunosuppressant)	Remove toxic excipients	Formulation	2 nd Generation formulation development underway.	<u>In-house</u>
Other**	Various	Formulation	1 st Generation formulation preparation.	<u>In-house</u>



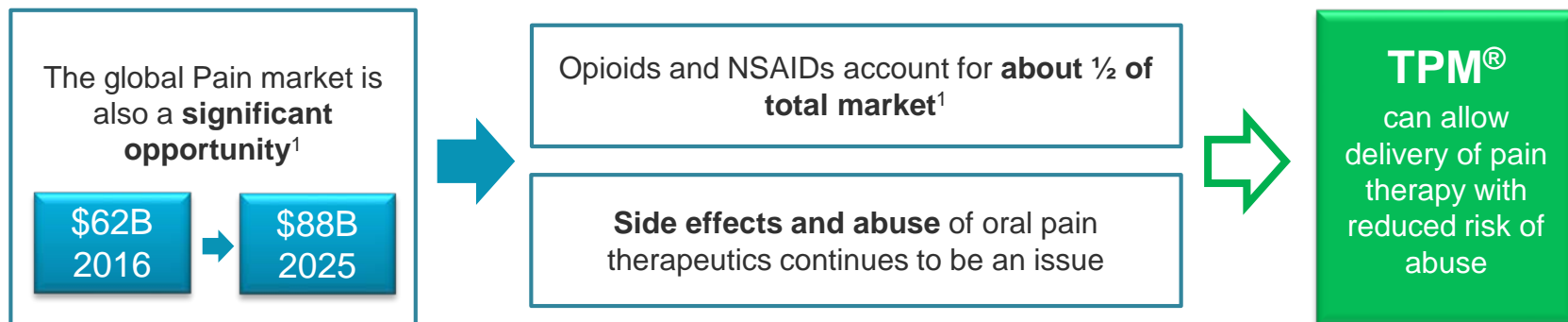
Injectable Portfolio

Pain Portfolio

Animal Health

Production

Phosphagenics' Human Health “Pain Product” portfolio is strong and benefits from global partnerships



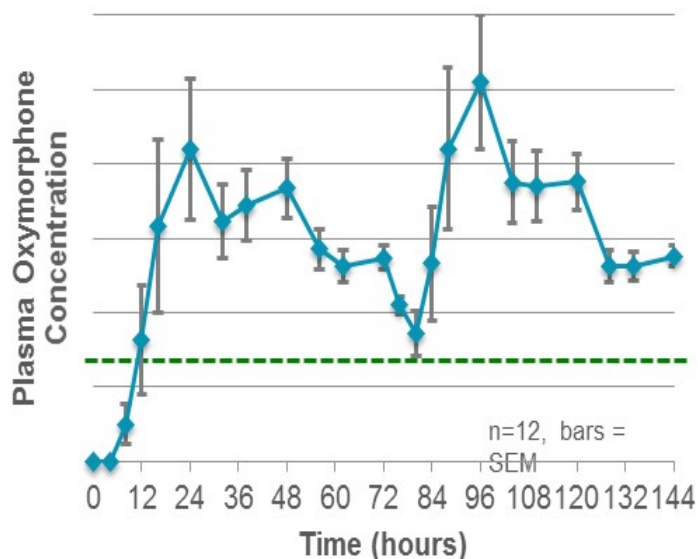
Product	TPM Advantage	Territory	Partner	Research	Development	Marketed
Pain Products						
Diclofenac Gel	Enhanced delivery	India & 16 countries	NOVARTIS THEMIS MEDICARE	→		
Oxycodone Patch	Transdermal Delivery & reduced abusability**	Global	Available	→	Pre-IND Meeting Completed Dec '18	
Oxymorphone Patch	Transdermal Delivery & reduced abusability**	Global	Available	→		
Additional Products ie: { Lidocaine gel ropivacaine gel others not disclosed	Enhanced delivery & other	Global	Available	→		

“TPM[®]/Oxymorphone patch” performance supports further development

Multiple dose clinical trial (sequential x 72 hour applications)

- World's first patch to deliver therapeutic levels of oxymorphone transdermally
- Consistent delivery profile, well tolerated, with minimal irritation
- ~75% less oxymorphone in patch vs. oxymorphone supplied in ER oral tablets over the same 72 hour period

Pharmacokinetics



Appropriate PK Curve has been seen with previous formulations

Advantages

- ✓ Decreased Frequency of Dosage
- ✓ Therapeutic Effect Stable & Consistent
- ✓ Decreased Drive for Abuse
- ✓ Bypassed First Pass Metabolism
- ✓ Reduced Total Drug Load
- ✓ Lowered Need for Supplemental Medication

Positive Pre-IND Meeting Dec '18 supported:

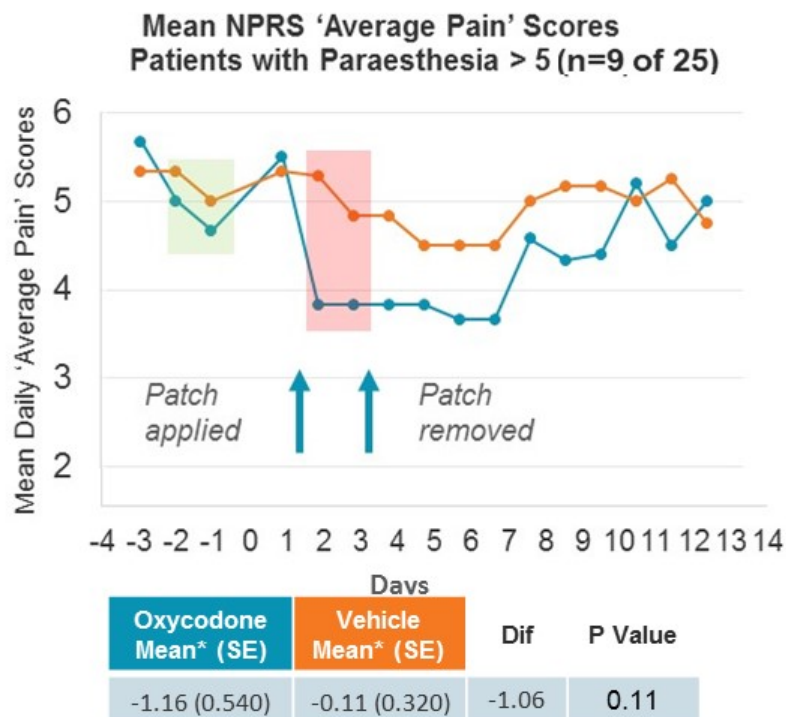
- ✓ Potential for Opana ER “Broad Pain” indication
- ✓ Potential for Abuse Deterrent Claims
- ✓ Potential “Broad Pain” indication from limited program

“TPM®/Oxycodone patch” performance in Phase 2a PHN trial supports further development

Overall efficacy did not reach significance in total population but strong trend in specific subgroup

Conclusion: Patch Performed well but local oxycodone treatment is not ideal for PHN pain

Efficacy



Performance

- ✓ Strong sustained trend in major subgroup persisting over 6 days
- ✓ Good 3 day Adhesion and Removal
- ✓ Good Tolerability/Safety
- ✓ Negligible irritation (= placebo)
- ✓ Appropriate Local Drug Delivery Profile
- ✓ No opioid related AEs or SAEs

Parameters support commercialisation in a different indication



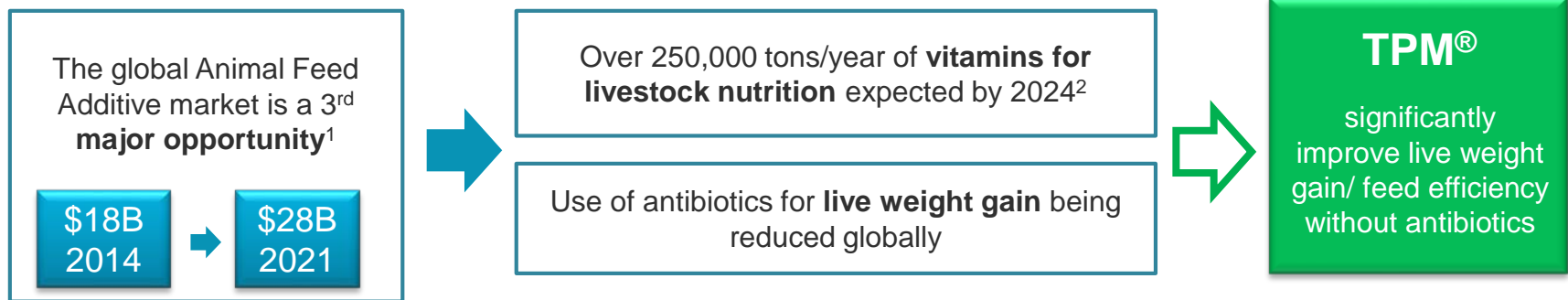
Injectable Portfolio

Pain Portfolio

Animal Health

Production

Phosphagenics has a strong “Animal Health” portfolio driven by recent strong trial data



Product	TPM Advantage	Territory	Partner	Research	Development	Marketed
Animal Health & Nutrition Products						
Pig, Poultry, Feed efficiency	3%+ increase in Feed Efficiency	Global	Available	→		
Cattle mastitis & fertility	Positive data as drench treatment, more work needed as an in-feed additive	Global	Available	→		

Note: “Multiple Global Feed companies are *currently undertaking Due Diligence* including trials”



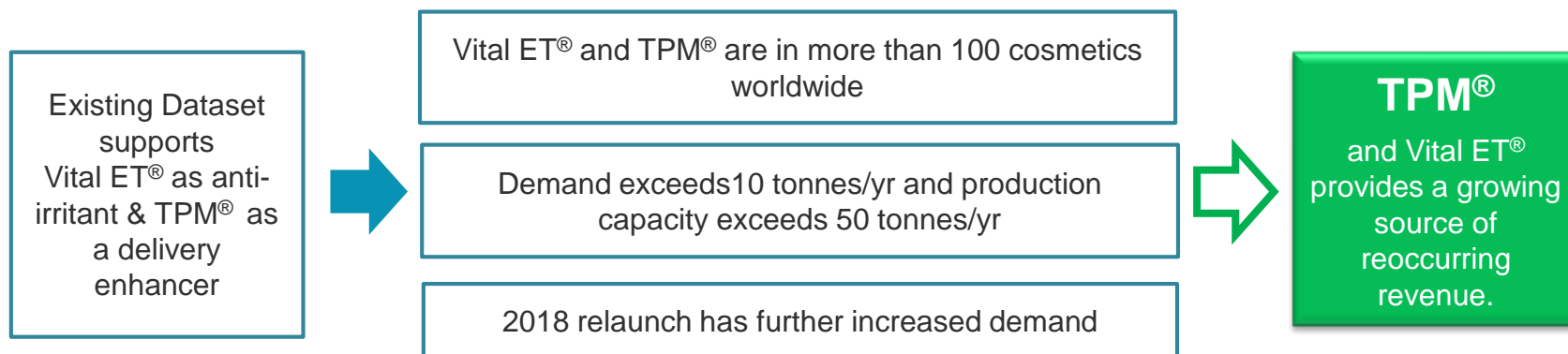
Injectable Portfolio

Pain Portfolio

Animal Health

Production

Phosphagenics' “Production” Business has multiple partnerships generating recurring revenues with opportunity for growth



Product	Territory	Partner	Research	Development	Marketed
Production					
Vital ET® (100+ Products)	Global	ASHLAND			
TPM® Based Products*	Global	THEMIS RODAN+FIELDS <i>Pure Beauty Australia</i>			

* (Non-exclusive). Available for additional Non-exclusive partners.



Strong investment Opportunity

Phosphagenics is a exciting investment opportunity



12 months Cash (as of Jan'19); No Debt; **Tax losses >A\$100M**



Experienced Management / Board with strong track record of success



Validated TPM® Technology through all three businesses

- Enhanced Injectables: **Late Phase (TPM® Daptomycin)** and multiple Early Phase
- “World first” transdermal opioid patches & gels – **successful FDA meeting complete**
- Positive Animal Feed Effect proven in multiple trials
- Excipient in multiple products across Pharma and Personal Care



Multiple Commercialised Products producing **Consistent Annual Revenues** from partnerships and sales of TPM® & Vital ET®



Strong Track record of delivering milestones with significant value-adding milestones targeted over the next 12 months



Attractive Growth Opportunity: The Board considers the current share price does not represent the potential of the company.

We have delivered consistent substantial news flow and target valuable newsflow over the next 12 months

<i>Commercial reformulation of TPM®/Oxymorphone Patch</i>	<i>Human Health</i>	Complete
<i>Successful Results for Swine Feed Efficiency Program</i>	<i>Animal Health</i>	Complete
<i>Successful results for Poultry Feed Efficiency Program</i>	<i>Animal Health</i>	Complete
<i>Sale of BioElixia® brand</i>	<i>Personal Care</i>	Complete
<i>Rights Issue raised over \$3.3M (+\$1.3M Jan'18)</i>	<i>Corporate</i>	Complete
<i>Outcome of Mylan Arbitration & “costs” settlement</i>	<i>Human Health</i>	Complete
<i>TPM® Propofol entered development</i>	<i>Human Health</i>	Complete
<i>Successful TPM® Oxymorphone Patch Pre IND FDA Meeting</i>	<i>Human Health</i>	Complete
<i>Animal Health Due Diligence trials report</i>	<i>Animal Health</i>	1Qtr 2019
<i>TPM® Daptomycin Injectable late phase program initiated</i>	<i>Human Health</i>	1H 2019
<i>Next TPM® Injectables progress to toxicology development</i>	<i>Human Health</i>	1H 2019



Key Statistics:

ASX/OTCQX Code

POH/PPGNY (listed 2004)

Headquarters

Melbourne, Australia

Employees

10

Shares

~1.5 billion

Cash

12 months (Jan 2019)

Revenue

~\$1.2M (2017)

3 Business Units

- Human Therapeutics
- Animal Nutrition
- Production & Personal Care



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