



August 2018

Phosphagenics: Non-confidential Presentation

www.phosphagenics.com
(ASX : POH)



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A snapshot of Phosphagenics

Innovative biopharmaceutical company headquartered in Australia



- **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



- **\$3.3M cash** (30 June 18), **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
- **Potential upside** from international arbitration with decision expected 1H 2018 (claims lodged of ~US\$300M)

- **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



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



David Segal, Non-Independent Director

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



Anna Legg, CFO & Company Secretary

- 20+ yrs financial experience; joined Phosphagenics in 2013
- Experience with establishment of international entities, statutory reporting, system development and financial modeling



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



Alex Stojanovic, VP Bus. Dev. & Commercial

- 14 yrs experience; joined Phosphagenics in 2014
- Previous: Sr Director of Grunenthal, Strategy Consultant of ZS Associates
- PhD in Pharmacology & Toxicology, Dartmouth College

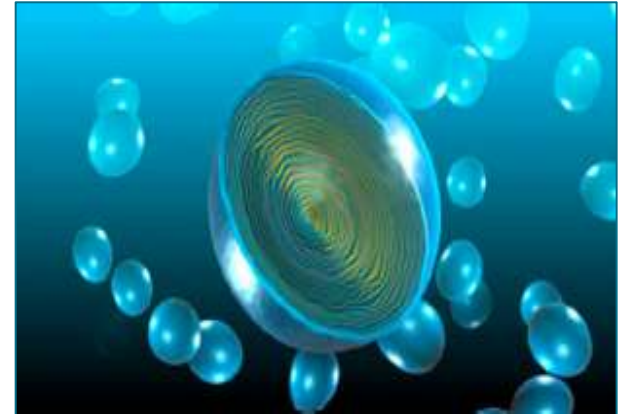


Roksan Libinaki, GM Animal Health & Nutrition

- 15+ yrs with Phosphagenics, managing R&D programs focused on improved oral bioavailability and/or efficacy of nutrients and drugs
- 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[®] ...”

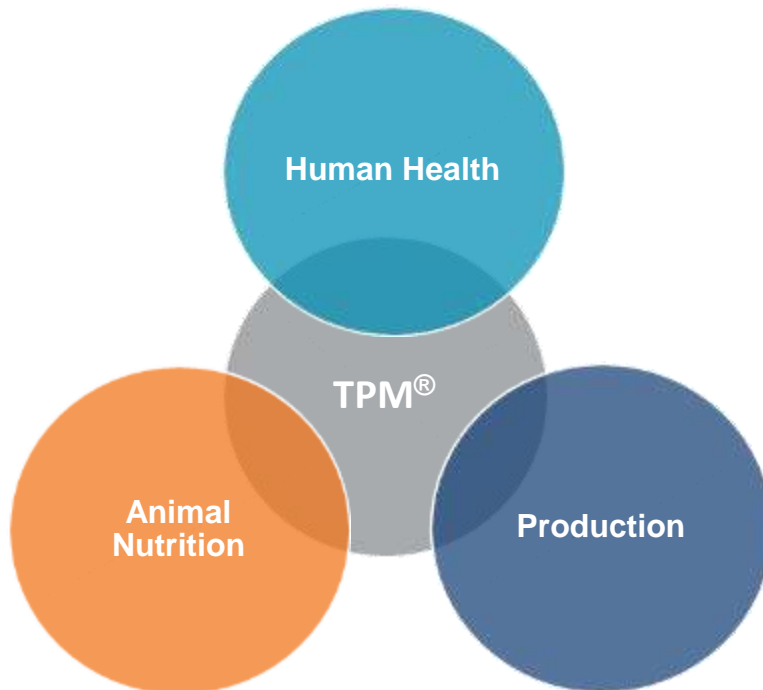


TPM[®] :

- proprietary combination of 2 forms of phosphorylated Vitamin E (in specific ratio)
- highly flexible technology with excellent safety profile
- improves drug solubility and stability to enhance injectable products
- enhances transdermal drug delivery and oral bioavailability
- protected by over 100 patents across 14+ families

TPM[®] is flexible and has broad applicability

Phosphagenics leverages TPM[®]'s flexibility and unique properties, data and broad patent portfolio across multiple lucrative markets



Highly versatile with an excellent stability and safety profile















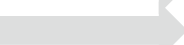



Enhances injectable drug solubility, stability & utility characteristics




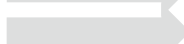
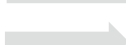


Enhances transdermal drug delivery and oral bioavailability

Phosphagenics TPM[®] Portfolio is growing across 3 Businesses:





Human Health Business

Product	Partner	Res'	Dev'	Market
Injectable Portfolio				
Daptomycin				
Propofol				
Azithromycin				
Melphalan				
Tacrolimus				
Cyclosporin				
Vitamin K				
Clopidogrel				
Pain Portfolio				
Diclofenac Gel				
Oxycodone Patch				
Oxymorphone Patch				
Lidocaine gel				
ropivacaine gel				
others not disclosed				

Animal Health & Nutrition Business

Product	Partner	Res'	Dev'	Market
Pig, Poultry, Feed efficiency				
Cattle mastitis & fertility				
Veterinary				
Aquaculture				
Companion animal				

Production & Personal Care Business

Product	Partner	Res'	Dev'	Market
Vital ET [®]				
TPM [®]				

 Partnered  Yet to Partner



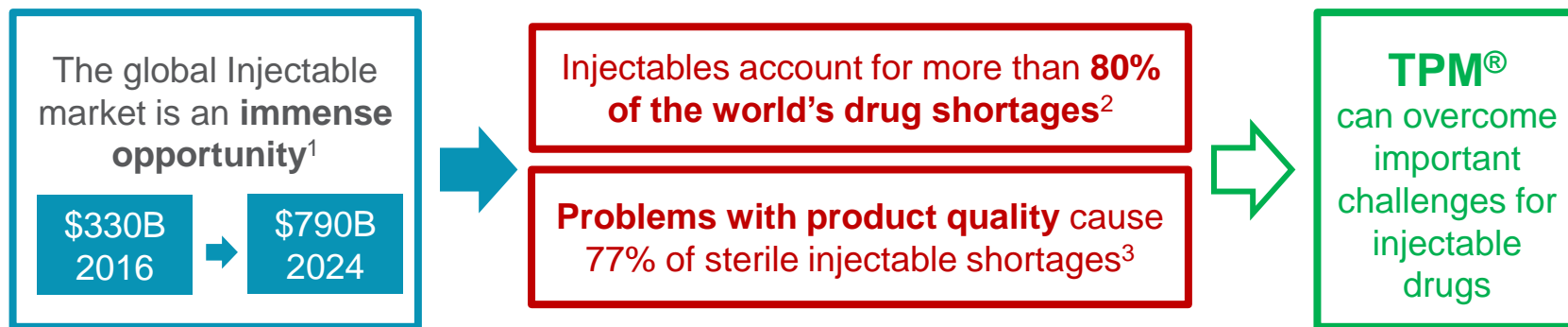
Injectable Portfolio

Pain Portfolio

Animal Health

Personal Care

TPM[®] can overcome key challenges for injectable drugs



CHALLENGES FOR INJECTABLES

TPM[®]

Manufacturing

- Complex, toxic or allergenic excipients
- Unstable formulation needing lyophilisation
- Drugs too unstable to be an injectable

- A **safer** and more natural excipient
- **Improve stability** reducing need to lyophilise
- Allows previously unsuitable drugs to be **injectable**

Supply Chain

- Need for 'Cold chain' to maintain stability
- Reconstitution of lyophilised powders

- **Reduce 'cold chain'** by improving RT* stability
- **Speed up reconstitution** of lyophilised drugs

Clinical Use

- Allergenic or toxic excipients
- Post reconstitution stability, single use only
- Incompatibility with injectable formulations

- **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



Our “Injectable” portfolio is the product of over 14 years research, \$100M investment and multiple global partnerships



TPM improves: **formulation safety, clarity, tolerability, stability, reconstitution.**



Product	TPM Advantage	Territory	Partner	Research	Development	Marketed
Injectable Products						
Daptomycin	Reconstitution speed & Stability	Global	Mylan®			
Propofol	Clarity & Excipient toxicity	Global	TERUMO			
Azithromycin	Lyophilized to Liquid	Global	Available			
Melphalan	Lyophilized to Liquid					
Tacrolimus	Remove toxic excipients					
Cyclosporin	Remove toxic excipients					
Vitamin K	Remove toxic excipients					
Clopidogrel	1 st feasible injectable form					
Others*	Various					



Partnered

Yet to Partner

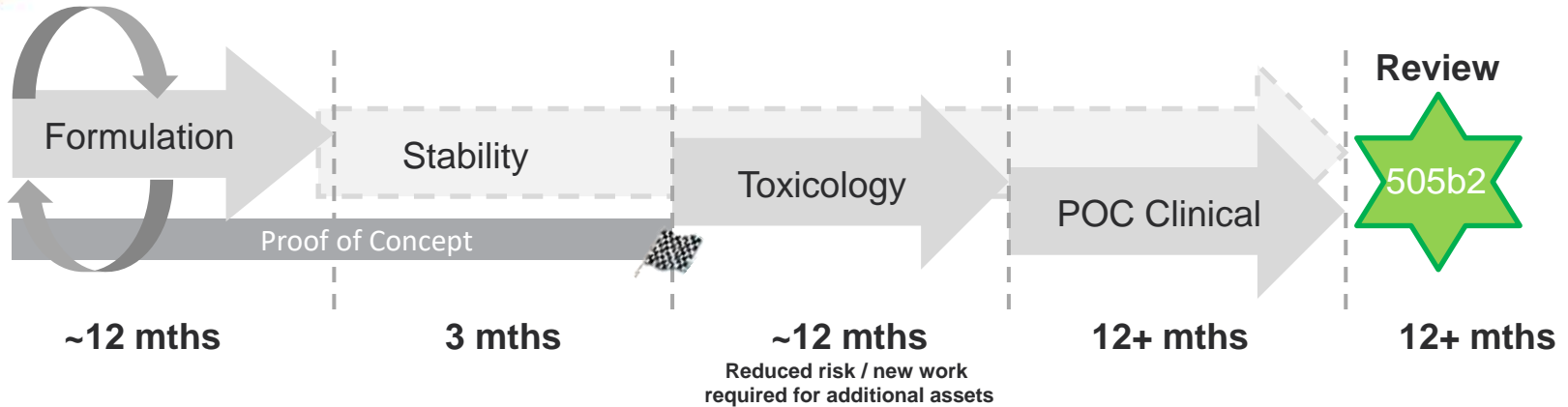
* Not yet disclosed



TPM[®] is proven to enhance the solubility and stability in lead injectable formulations

Product	Benefits	Status
<p>TPM[®]/ Daptomycin</p>	<ul style="list-style-type: none"> • TPM[®] reduces reconstitution time <i>by more than half</i> • TPM[®] doubles the shelf life <i>at room temperature,</i> • TPM[®] potentially transforms the present single use product into a world first multi-use product 	<ul style="list-style-type: none"> • Later Phase Dev. (TBC) • Arbitration Outcome pending <p> Mylan[®]</p>
<p>TPM[®]/ Propofol</p>	<ul style="list-style-type: none"> • TPM[®] solubilises propofol <i>without excipients that can be allergenic or promote bacterial growth</i> • TPM[®] creates a completely clear solution, a world first 	<ul style="list-style-type: none"> • Formulation complete • Early Dev. Tox. Initiated <p> TERUMO</p>

“Injectable” assets are fast and profitable



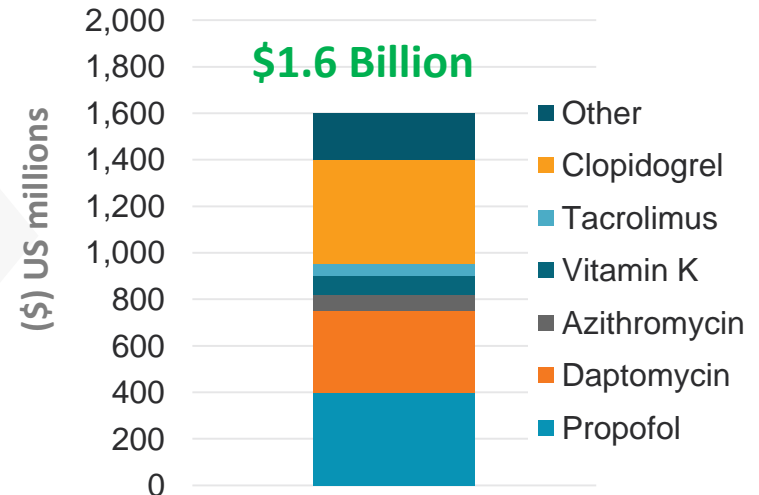
Estimated 2030 US Market for Current TPM/Injectable Pipeline

TPM allows:

- Lyophilized to Liquid
- Replacement of toxic excipients
- Improved stability
- 1st/novel Injectable forms

TPM COGS allows:

- improved / reformulated 505b2 products at Generic pricing
- Competitive pricing that capturing large volume / market share





Phosphagenics' arbitration with Mylan is over TPM[®]/Daptomycin



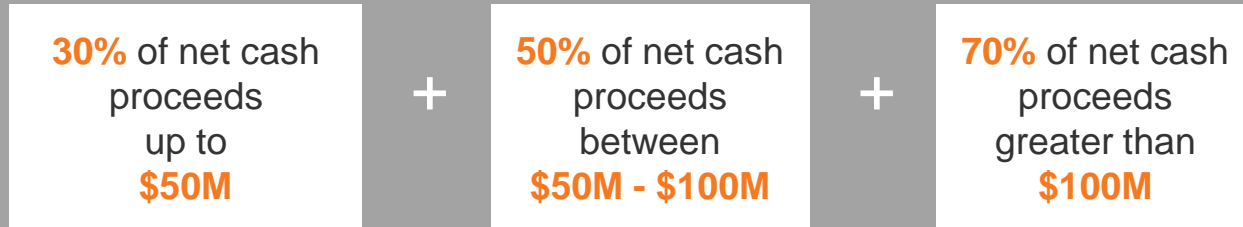
*Phosphagenics' independent experts opinion if successful on all claims and causes of action, aggregate of all claims, recognising a probability of success from zero to maximum calculated by the experts



Board of Directors recommends shareholder return*

If Phosphagenics is successful and receives a material payment from Mylan, the Board intends to recommend a return of capital* (after costs):

Calculation:



Illustrative Example



* Actual amount and timing of shareholders return will be dependent on (i) financial position of the company at the time of decision, (ii) Actual Cash Award received by POH less estimated costs, (iii) number of shares on issue and (iv) Board and shareholder approval

Return may vary due to tax status of recipient



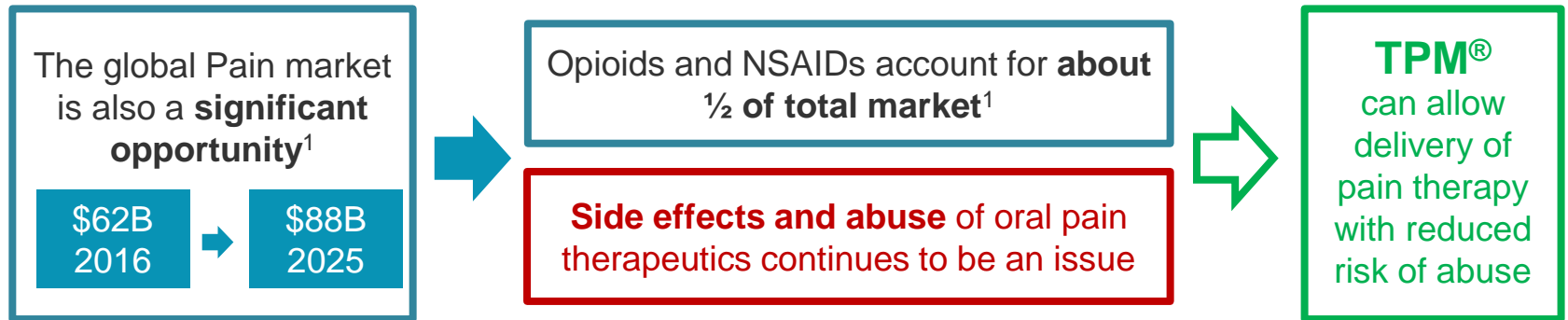
Injectable Portfolio

Pain Portfolio

Animal Health

Personal Care

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	NOVARTIS	→		
Diclofenac Gel	Enhanced delivery	16 countries	THEMIS MEDICARE	→		
Oxycodone Patch	Transdermal Delivery & reduced abusability**	Global	Available	→		
Oxymorphone Patch	Transdermal Delivery & reduced abusability**	Global	Available	→		
Additional Products ie: { Lidocaine gel ropivacaine gel others not disclosed	Enhanced delivery & other	Global	Available	→		

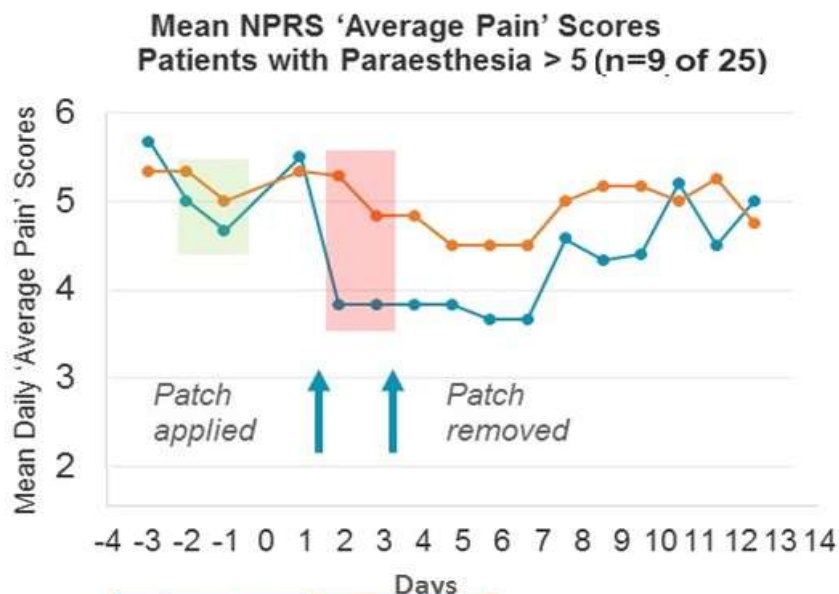
Pre-IND Meeting Dec '18

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

- ✓ 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

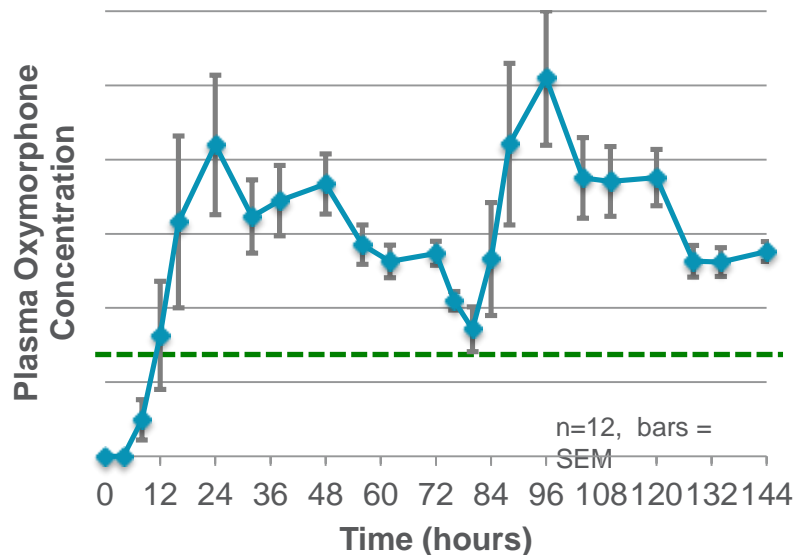
Parameters support commercialisation in a different indication

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
- 2 sequential patch application (in n=12), mean CMAX increases, Consistent delivery profile, Well tolerated, minimal irritation
- 75% less oxymorphone required for pain administration vs. oxymorphone ER oral tablets over the same 72 hour period

Pharmacokinetics



Previous formulations have already demonstrated appropriate PK Curve

Advantages

- ✓ Improved Drug Delivery Duration
- ✓ 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

Parameters support commercialisation



Injectable Portfolio

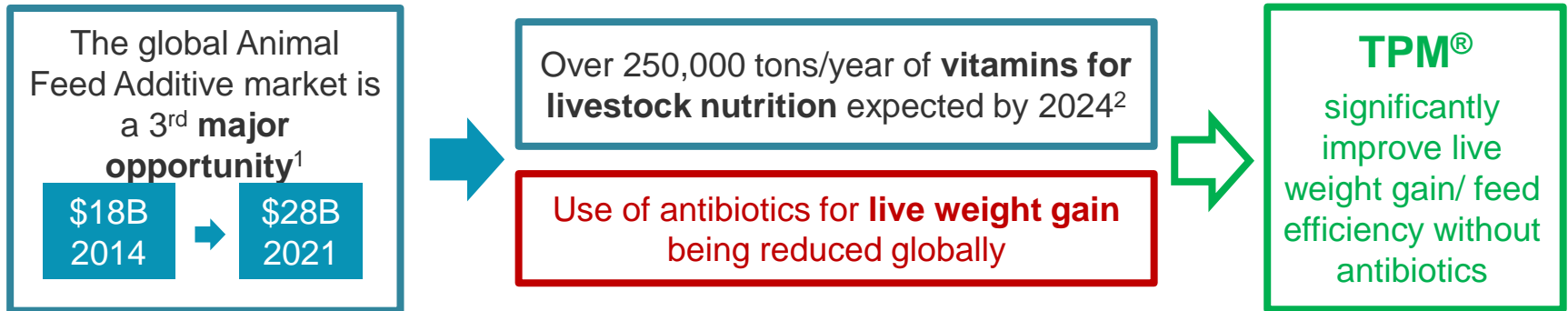
Pain Portfolio

Animal Health

Personal Care



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	→		

Partnered
 Yet to Partner

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

1 “World Animal Feed Additives - Market Opportunities and Forecast, 2014-2021” - Allied Market Research
 2 www.gminsights.com/industry-analysis/animal-feed-additives-market

Phosphagenics' "Personal Care" portfolio has multiple partnerships generating growing recurring revenues



Product	Territory	Partner	Research	Development	Marketed
Personal Care					
Vital ET® (100+ Products)	Global	ASHLAND	➔		
TPM® Based Products	Global	LE MÉTIER DE BEAUTÉ RODAN+FIELDS <i>Pure Beauty Australia</i>	➔		

■ Partnered

□ Partnered (Non-exclusive). Available for additional Non-exclusive partners.



Phosphagenics is an exciting investment opportunity



~12mth cash (A\$3.3M at 30 June 18); No Debt; **Tax losses >A\$100M**



Experienced Management / Board with strong track record of success



Validated TPM[®] Technology through all three businesses

- Portfolio including “world first” transdermal opioid patches, gels & injectables



Multiple Commercialised Products and **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 valuation: Share price/value disparity. Substantial upside potential and potential capital return from any net cash received from Mylan arbitration

We have delivered consistent substantial news flow and target valuable newsflow over the next 6 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>Terumo Agreement signed for “TPM[®]/Oxymorphone Patch”</i>	<i>Human Health</i>	Complete
<i>Credit Pharma Term Sheet for “TPM[®]/Diclofenac Gel”</i>	<i>Human Health</i>	Complete
<i>Rights Issue raised over \$3.3M (+\$1.3M Jan’18)</i>	<i>Corporate</i>	Complete
<i>Mylan Arbitration Formal Hearing</i>	<i>Human Health</i>	Complete
<i>Results of Dairy Cattle Feed additive program</i>	<i>Animal Health</i>	Complete
<i>Outcome of Mylan Arbitration</i>	<i>Human Health</i>	Decision Pending
<i>TPM[®] Injectable Candidates to enter development</i>	<i>Human Health</i>	2H ‘18
<i>TPM[®] Oxymorphone Patch Pre IND FDA Meeting</i>	<i>Human Health</i>	4Q ‘18



Phosphagenics

Innovative Biopharmaceutical Company Headquartered in Australia

Key Statistics:

ASX/OTCQX Code	POH/PPGNY (listed 2004)
Headquarters	Melbourne, Australia
Employees	12
Shares	~1.5 billion
Cash	~12mth Cash (\$3.3M at 30 June 2018)
Revenue	~\$1.2M (2017)
Market Cap	~\$27M (at \$.018/share)
3 Business Units	<ul style="list-style-type: none">• Human Health• Animal Health & Nutrition• Production & Personal Care



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