



"Delivering more"

Phosphagenics Limited

Associate Professor Andrew Vizard  
Excellence in Biotechnology Investment  
Conference

21 April 2008

# Safe harbor



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*This presentation contains forward-looking statements based on current expectations of future events. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialise, actual results could vary materially from the Phosphagenics' expectations and projections. Risks and uncertainties include general industry conditions and competition; economic conditions, such as interest rate and currency exchange rate fluctuations; technological advances and patents attained by competitors; challenges inherent in new product development, including obtaining regulatory approvals; domestic and foreign health care reforms and governmental laws and regulations.*

# Phosphagenics



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*Melbourne based, global drug delivery company, with offices in New York, focused on the discovery of new and cost effective ways to enhance the delivery of proven products.*

## Public listed company

- Australian Stock Exchange (POH)
- London Stock Exchange - Alternative Investment Market (PSG)
- US Level 1 ADR - OTCQX (PPGNY)

# Business Strategy



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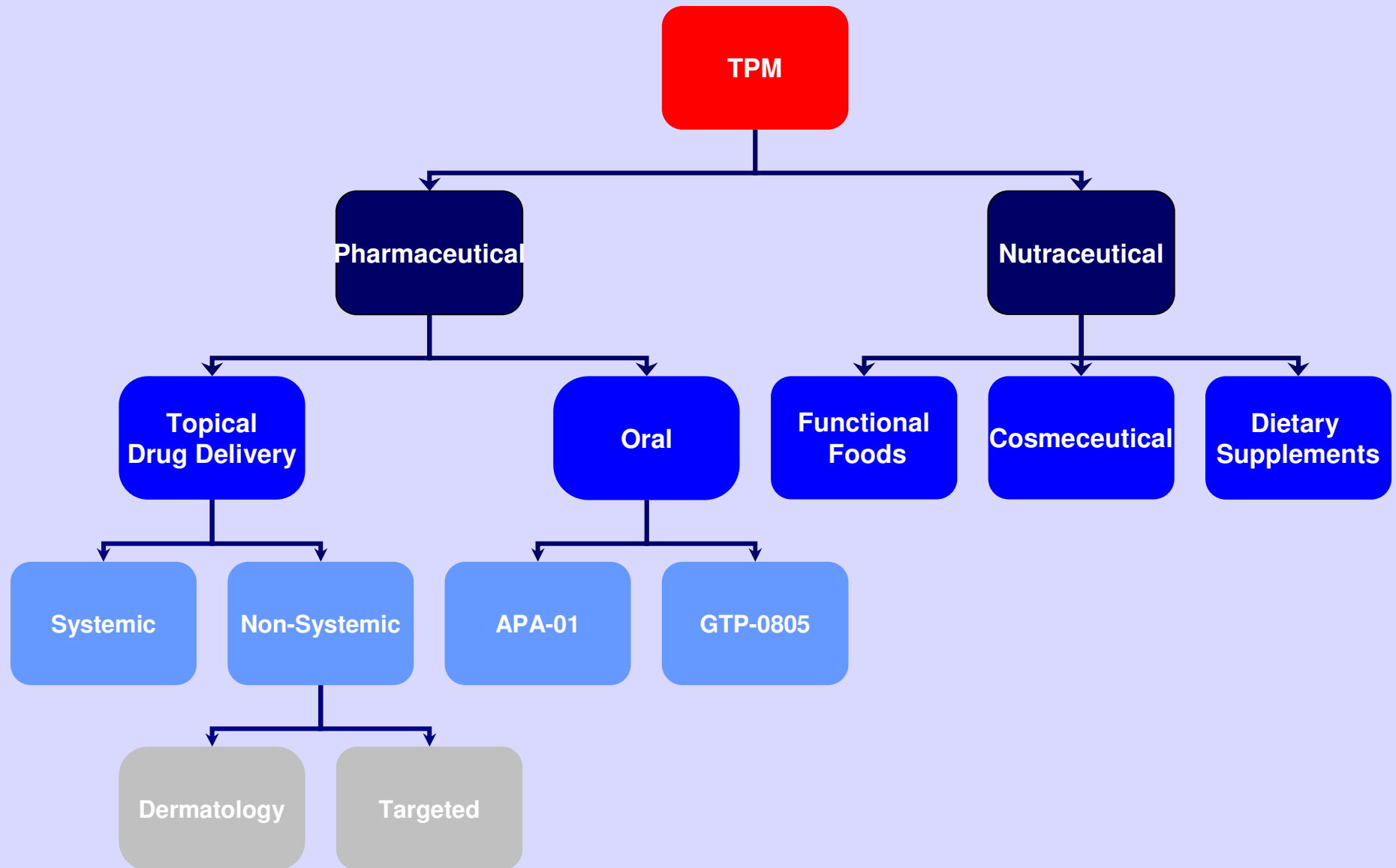
## TPM has multiple applications

- Multiple revenue opportunities:
  - Pharmaceutical
  - Nutraceutical
  - Manufacturing

## Lower risk business model

- Drug delivery focus
  - Faster time to market
  - Lower R&D expenditure
  - Increased success rate

# Applications of TPM



# TPM topical delivery – features & benefits



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FEATURE		BENEFITS	
<b>1</b>	<b>Targeted delivery of actives</b>	→	<i>Provides either systemic or localised delivery</i>
<b>2</b>	<b>Can transport both small and large molecules</b>	→	<i>Technology applicable to a wide range of drugs</i>
<b>3</b>	<b>Powerful penetration enhancer that does not disrupt or irritate the dermis</b>	→	<i>No skin irritation Maintains skin integrity</i>
<b>4</b>	<b>Allows for a sustained release of compounds from one application</b>	→	<i>Flexible dosage regimens Longer therapeutic levels maintained</i>
<b>5</b>	<b>Rapidly penetrates the dermis (less than 1 hour)</b>	→	<i>Permits normal daily activities (e.g. showers, swimming)</i>
<b>6</b>	<b>Other routes of administration beyond transdermal under investigation</b>	→	<i>Can be produced in a wide range of presentations (powder, liquid, gel etc)</i>

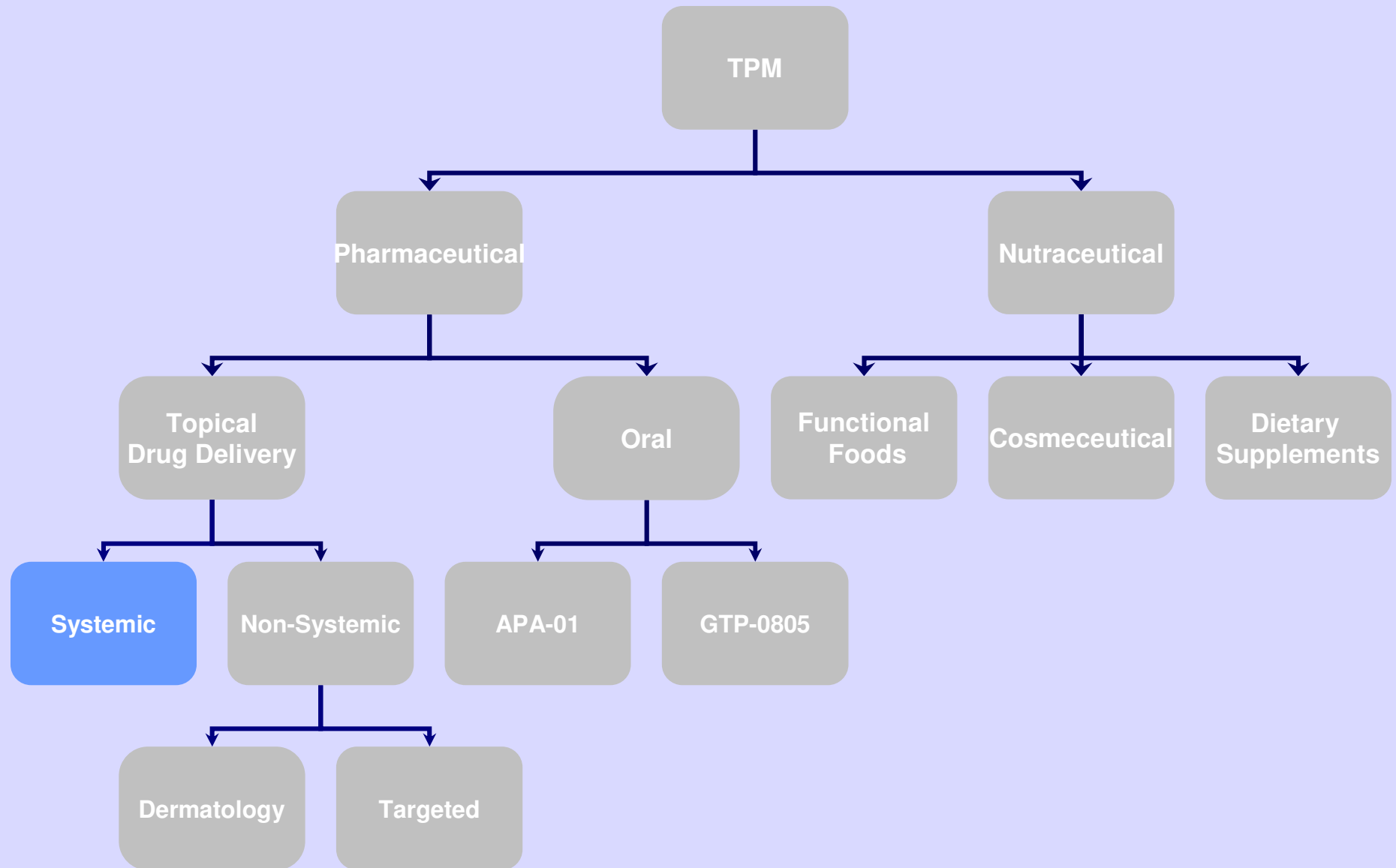
# Strong product pipeline

	Discovery & Research	Pre-clinical	Phase 1	Phase 2	Target Application
<b>Drug Delivery – Systemic/Transdermal</b>					
Insulin	[Progress bar]				Diabetes
Morphine	[Progress bar]				Pain Management
Oxycodone	[Progress bar]				Pain Management
<b>Drug Delivery - Non-systemic/Localised</b>					
Retinoic Acid (Dermatology)	[Progress bar]				Acne
Lidocaine	[Progress bar]				Pain Management
Diclofenac	[Progress bar]				Pain Management
<b>Oral</b>					
Phospha E® (Nutra)	[Progress bar]				Metabolic Syndrome
APA-01 + Statin	[Progress bar]				Atherosclerosis
GTP-0805	[Progress bar]				Cancer

# Applications of TPM



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# Systemic transdermal – insulin



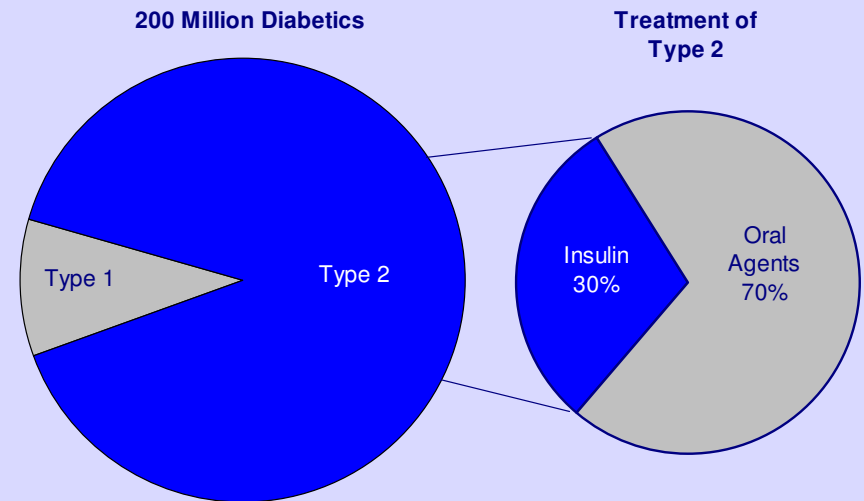
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## Market size

- Diabetes therapies – sales US\$ 17.8 B 2005
- Insulin products – sales US\$ 7.2 B 2005

## Target market

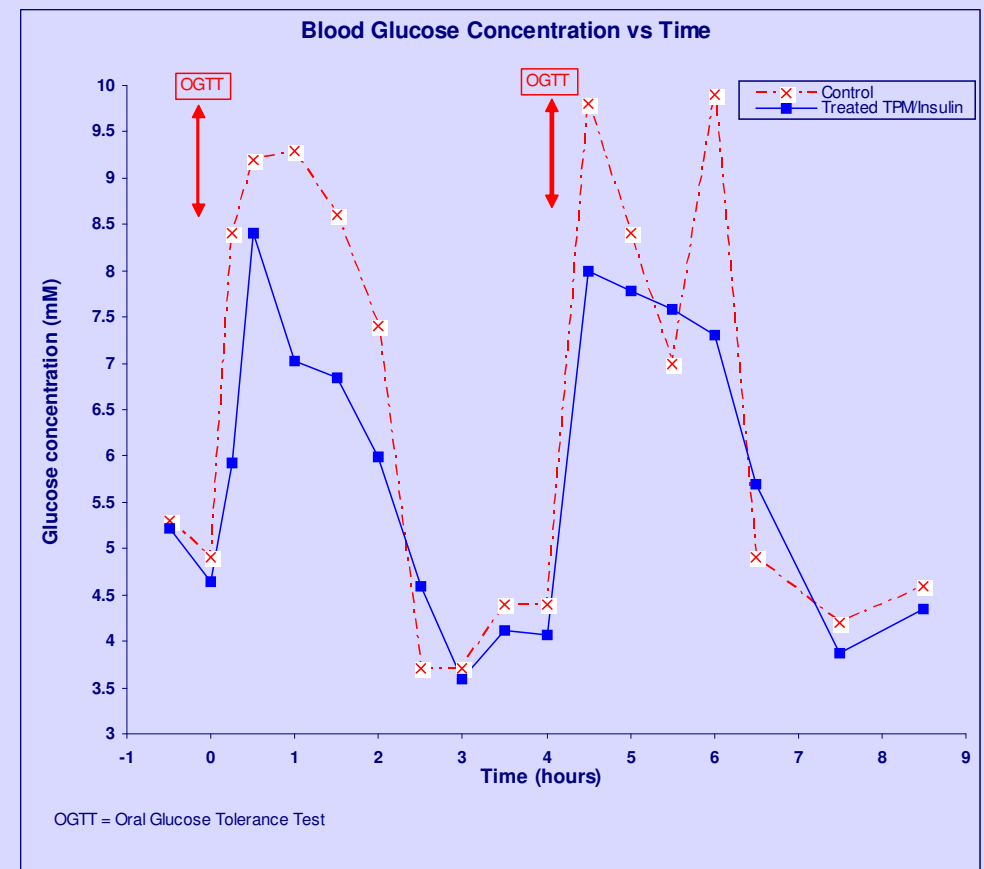
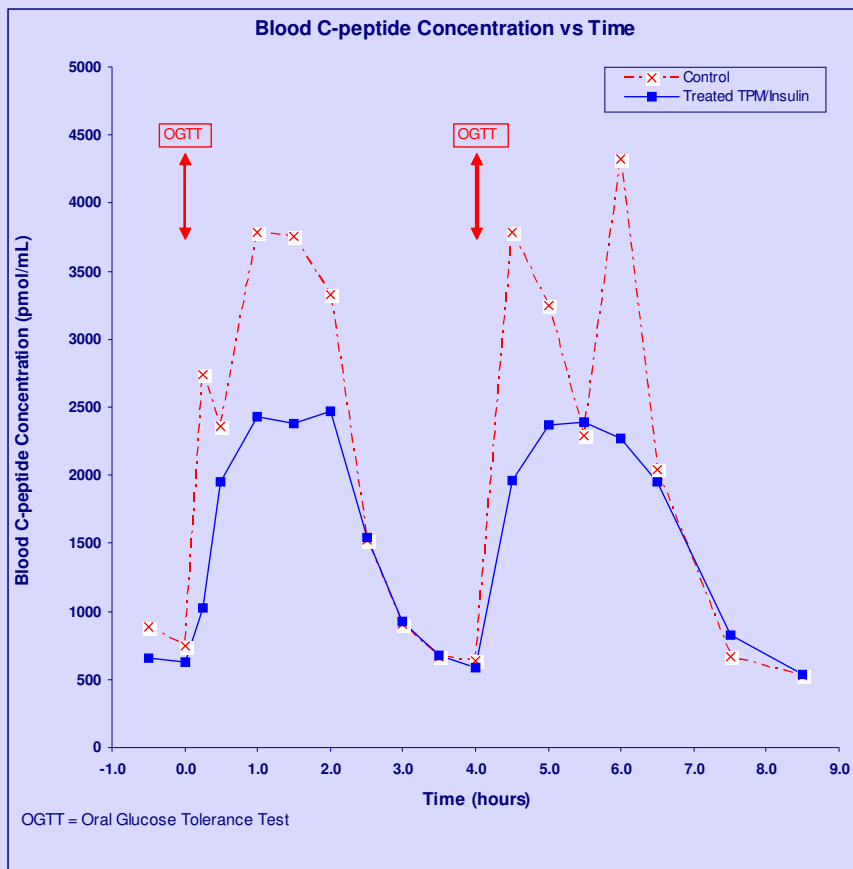
- Basal insulin
- Currently injected



# Systemic transdermal - insulin phase 1

## Results

- Effect of transdermal insulin on plasma C-peptide and blood Glucose after two consecutive OGTT in non-diabetic humans



# Systemic transdermal – insulin phase 2



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## Current Phase 2 trial

- Phase 2 trial currently underway at CMAX, Royal Adelaide Hospital and QPharm in Queensland, Australia
- Total number of patients – 60
- Trial design - randomised single-blinded, placebo controlled, three way cross-over
- Primary endpoint - assessing the efficacy of TPM/Insulin in patients with Type 1 and Type 2 diabetes
- Conducted in Australia in collaboration with the Joslin Diabetes Centre/Harvard Medical School, Boston, US

# Systemic transdermal - opioids



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## Market size

- Sales of narcotic analgesics ~ US\$ 6.0 B globally per annum
- Oxycodone is a leading pain-management drug with worldwide annual sales exceeding US\$ 1 B

## Market opportunity

- Transdermal administration of analgesics offers sustained delivery of opioids for chronic pain sufferers and prevents breakthrough pain
- Potential for decreasing side-effects by preventing dose spiking observed with oral doses

## Market positioning

- No other transdermal morphine or oxycodone available or known to be in development

# Systemic transdermal - oxycodone



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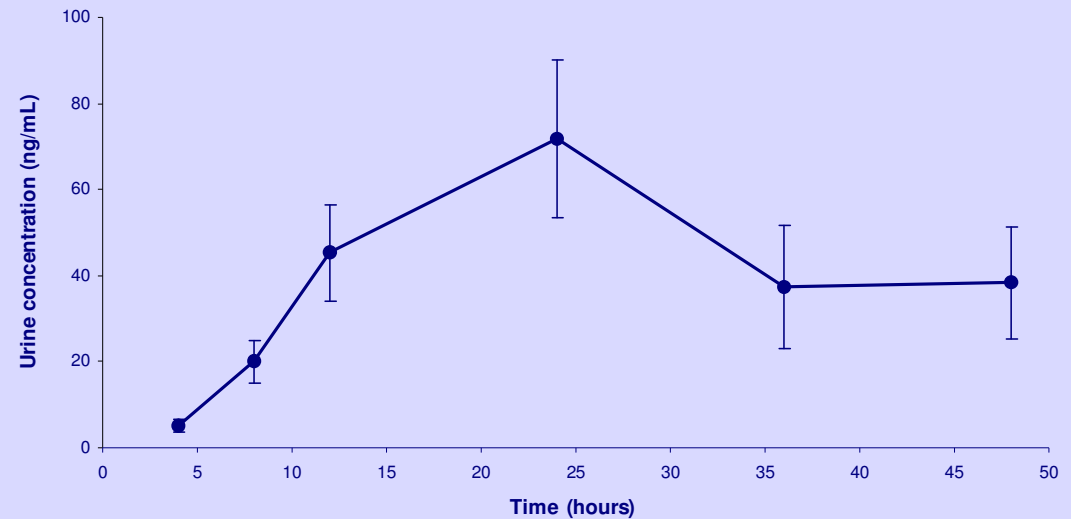
## Phase 1 Results

- Mean levels of oxycodone in urine following single administration of TPM/Oxycodone

## Development status

- Patch development in progress
  - Collaboration with leading patching development company
  - Plans for patch clinical study in 2H 2008

Mean Levels of Oxycodone in Urine following Single Administration of TPM/Oxycodone 200mg (n=16)



# Systemic transdermal - abuse deterrence



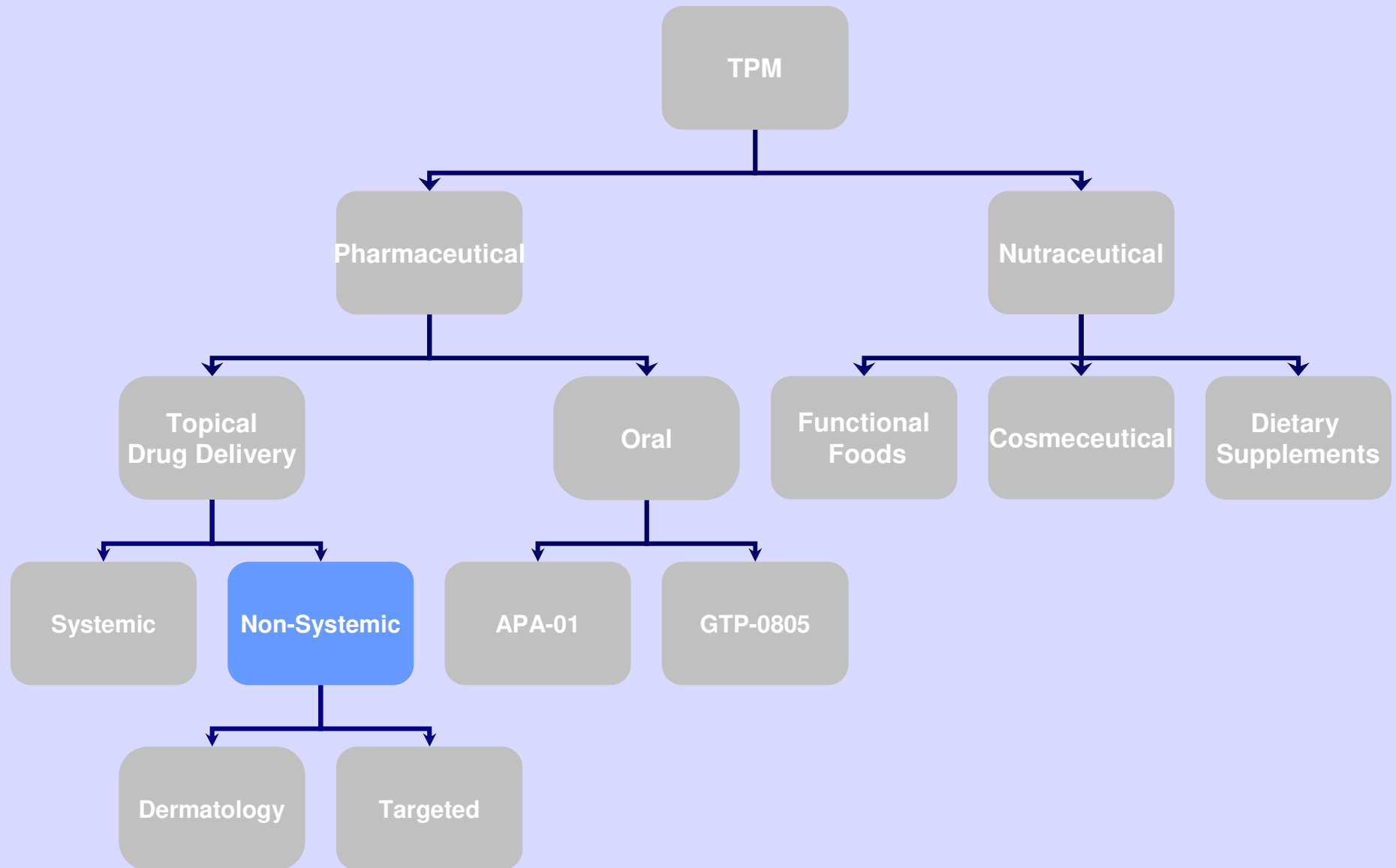
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## Morphine & oxycodone formulated with TPM

- Resists physical dissolution (cannot be dissolved in alcohol and acidic beverages)
- Thick - high viscosity prevents injection
- Stickiness prevents snorting
- Novel formulation prevents thermal extraction
- Demand for abuse resistant products increasing, few competitors in development

**Slow release of morphine or oxycodone = No EUPHORIA**

# Applications of TPM



# Localised delivery

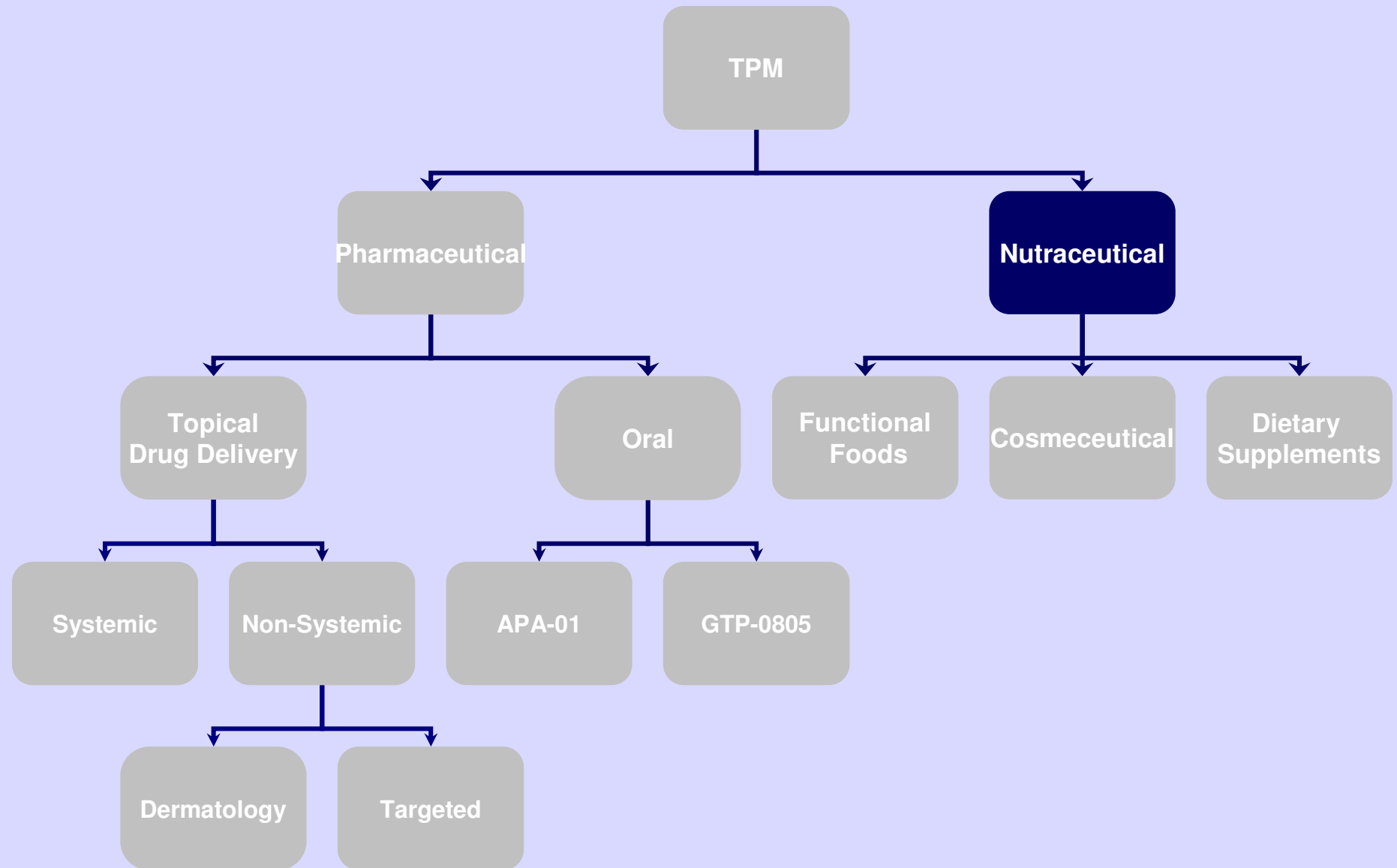
## Products under development

- Current products under development include:
  - Diclofenac – leading product sales over US\$ 400 M
  - Lidocaine – local anaesthetic market US\$ 1.2 B
  - Retinoic acid – topical retinoids market over US\$ 340 M

## Recent comparable deals

- Voltaren Gel<sup>®</sup> (diclofenac) licensed for US market for upfront payment of \$US85 million plus potential milestone payment of US\$25 M
- Lidoderm<sup>®</sup> (lidocaine) deal worth US\$ 10.05 M

# Applications of TPM



# Nutraceutical deals

## Nestlé Nutrition – Phospha E<sup>®</sup>, functional foods

- Option exercised by Nestlé Nutrition January 2007
- Currently negotiating a commercial global exclusive license
- Phase 2 human clinical trial for Metabolic Syndrome underway – funded by Nestlé Nutrition
- Phospha E<sup>®</sup> is a patented derivative of vitamin E with demonstrated superior properties in pre-clinical studies e.g.:
  - lowering cholesterol and triglycerides,
  - prevention of plaque formation in heart arteries, and
  - unique anti-inflammatory properties.
- Generally Recognized As Safe (GRAS) status in US



## ISP – Vital ET<sup>™</sup>, personal care

- Distribution agreement with ISP
- Manufactured in Melbourne by Phosphagenics





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# Phosphagenics

Financial and corporate information

# Capital

## Market capitalisation

- A\$ 106 M (at 17.5 cents per share) = US\$ 98M
- 603.4 M shares (ASX:POH)
- 59.7 M options outstanding (ASX:POHOB)

## Government grants 2007

- A\$ 3.2 M Pharmaceutical Partnership Program over 3 years
- A\$ 2.1 M Commercial Ready over 2 years

## Cash balance

- A\$ 10.7 M at 31 December 2007

# Board & scientific advisers



## Directors

Harry Rosen	President & Chief Executive Officer
Dr Esra Ogru	Executive Vice President of R&D
Assoc. Prof. Andrew Vizard	Non Executive Chairman
Professor John Mills	Non Executive Director
Jon Addison	Non Executive Director
Michael Preston	Non Executive Director

## Scientific advisers

Dr Simon West	Phosphagenics Limited
Professor Angelo Azzi	University of Berne, Switzerland Tufts University, Boston, US
Professor Thomas Rades	University of Otago, New Zealand
Professor Ishwarlal Jialal	UC Davis Medical Centre, Sacramento, US
A/Professor William Hsu	Joslin Diabetes Centre, Harvard Medical School, US

# Business Strategy



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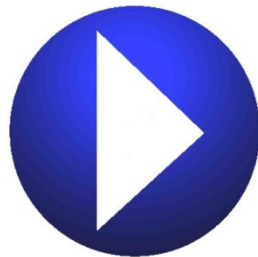
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