



PHOSPHAGENICS

# TPM/Oxycodone Fact Sheet

## What is TPM?

Phosphagenics' core technology is built around the science and application of phosphorylation, a process where the addition of a phosphate group has been found to enhance the bioavailability, activity and safety of existing pharmaceuticals and nutraceuticals, as well as to assist in the production of drug delivery platforms.

The potential benefits of transdermal drug delivery have been widely reported in scientific literature and include a reduction in dose related side effects, the prevention of first-pass hepatic elimination and gastrointestinal degradation, as well as improved patient compliance.

The key distinguishing features that contribute to the uniqueness and advantages of both the delivery system and the benefits they provide are summarized below:

FEATURE	BENEFITS
Can transport both small and large molecules	<i>Technology applicable to a wide range of drugs</i>
TP Found as an endogenous molecule in biology (Tocopherol converts to TP)	<i>Natural and safe</i>
Powerful penetration enhancer that does not disrupt or irritate the dermis	<i>No skin irritation Maintains skin integrity</i>
Allows for a sustained release of compounds from just one application	<i>Flexible dosage regimens Longer therapeutic levels maintained</i>
Rapidly penetrates the dermis (less than 1 hour)	<i>Permits normal daily activities (e.g. showers, swimming)</i>
Cost-effective to produce	<i>Significant value add opportunity</i>
Other routes of administration beyond transdermal under investigation	<i>Can be produced in a wide range of presentations (powder, liquid, gel, sprays etc)</i>

## About Phosphagenics

Phosphagenics is a Melbourne-based, globally driven biotechnology company focused on the discovery of new and cost effective delivery systems to enhance the bioavailability, activity, safety and delivery of proven pharmaceutical and personal care products (including nutraceuticals and cosmeceuticals).

Phosphagenics' shares are listed on the Australian Stock Exchange (POH) and Phosphagenics' ADR's (PPGNY) are traded on the OTCQX in the US.

For additional information and partnering opportunities contact:

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## About Oxycodone

Oxycodone, a leading pain management drug, is currently administered in tablet or intravenous form and is more potent than morphine with fewer adverse effects. In 2007, global sales of oxycodone exceeded \$2679m USD.

Phosphagenics is working towards becoming the first to provide chronic pain sufferers with a patch that will provide sustained-release of oxycodone into the bloodstream. Previous clinical trials have demonstrated that Phosphagenics' patented technology can effectively deliver opiates through the skin without causing any disruption or irritation.

## Phase IB Study

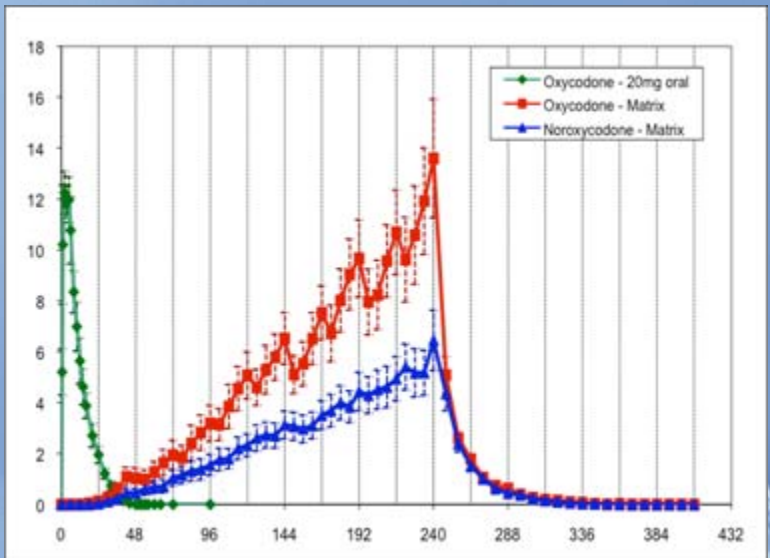


Figure 1 – Plasma oxycodone concentration over time following repeated application of the TPM/oxycodone patch systems. A representative curve for 20mg oral Oxycotin has been included for comparison. Bars represent SEM.

Phosphagenics conducted two phase I studies in 2009 on its TPM/oxycodone formulation, both with successful results. The first study, an open-label, human Repeat Insult Patch Test (RIPT) evaluated the skin response of fifty healthy participants with both an induction phase and a challenge phase. The study concluded that no significant erythema or sensitization were observed.

The second study, a Repeat Dose Application study, was an open label, single centre pharmacokinetic study in twenty healthy volunteers conducted at the Royal Adelaide Hospital. Its primary objective was to compare the delivery profiles of two transdermal patch candidates containing TPM™, a matrix and a reservoir system, following daily application over a ten-day period. The study reported positive results using the Company's proprietary TPM™ (Targeted Penetration Matrix) technology for the transdermal delivery of oxycodone and revealed that daily application of the TPM/oxycodone patch delivered therapeutic bloodstream levels in a reproducible, consistent and sustained manner, again with no irritation observed.

Phosphagenics is now planning the next stage of its oxycodone development. Under the guidance of Professor Guy Ludbrook, Head of Discipline, Anaesthesia & Intensive Care, at the Royal Adelaide Hospital, Phosphagenics has assembled an advisory panel of international pain experts to plan the path forward into its phase 2/3 trials and beyond. Phosphagenics expects to commence its next clinical study in the second half of 2010.