

Drugs Delivered Directly Into Cells Thanks To Nanotechnology; Patent Granted for BioSilicon

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Global [nanotechnology](#) company pSivida Limited, is pleased to announce that its UK operating subsidiary pSiMedica Limited has been granted a further US patent for **BioSilicon**(TM).

US Patent Number 6,770,480 provides protection for the transfer of a substance, such as a drug or genetic material, into a cell utilizing resorbable silicon, such as certain biodegradable forms of porous or polycrystalline silicon (BioSilicon(TM)).

One of the key attributes of BioSiliconTM is its capacity to be micro-engineered into complex and precise shapes. This property stems from a long history of silicon-based micro-engineering in the electronics industry. pSivida is capitalizing on this property of BioSiliconTM to create microstructures suited to the delivery of drugs directly into cells or through barriers such as the skin. This is achieved through the construction of needle microarrays that are so small that they are invisible to the naked eye.

A key attraction in using BioSiliconTM for the construction of such drug delivery arrays, is the fact that the material is biodegradable, unlike needles constructed out of conventional metals (steel etc). Thus, a needle microarray on a transdermal patch for delivery of drugs through the skin would enable a drug to cross the skin barrier.

Such needle arrays are expected to be virtually pain free due to the extremely small needle size. Furthermore, any loss of needles in the skin would safely biodegrade.

The technology also provides for a method of transferring drugs through the cell membrane in specific settings.

pSiMedica Managing Director Mr. Gavin Rezos, said “The granting of this patent is in line with our commercialization strategy to achieve a diverse range of applications or BioSilicon™ within the healthcare sector. Delivery of drugs transdermally is a large and growing market with products for hormone replacement therapy (HRT) and nicotine patches leading sales.”

The pSiMedica Intellectual Property portfolio now consists of 21 patent families, 19 granted patents and over 80 patent applications. pSiMedica owns all of the Intellectual Property (royalty free) for the application of BioSilicon™.

Products protected by patents and patent applications owned by pSiMedica include materials comprising bioactive, resorbable and biocompatible silicon that are of value in the fabrication of new generations of intelligent drug delivery devices, orthopaedic implants and intelligent diagnostic tools.

The original press release can be found [here](#).

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