



## **US patent granted to PhotoBiotics for new targeted cancer therapy**

*London, April 2010:* PhotoBiotics is pleased to announce the granting of a US patent<sup>1</sup> that underpins its revolutionary targeted anti-cancer therapy. PhotoBiotics CEO Paul Arnott said, "This US patent is an important step towards commercialising our leading edge technology. Coupled with our Australian patent granted in 2008, we confidently anticipate further patent grants throughout the world. Combined with the huge selectivity gains over conventional methods that we've already demonstrated in targeting and destroying tumours, plus the rest of our developing patent portfolio, the US patent grant greatly enhances our value proposition."

The key to PhotoBiotics revolutionary anti-cancer therapy is its proprietary PhotoLink technology for coupling light-activated drugs to special tumour-targeting proteins called antibody fragments: these ensure the drugs are carried specifically to cancerous cells. Here, laser light causes the drugs to convert nearby oxygen into a highly toxic form which destroys tumours without causing the devastating side-effects associated with conventional chemotherapy/radiotherapy/surgery.

The design of PhotoBiotics' products also facilitates their rapid removal from the body following treatment. "This property, together with the targeting function, minimises the risk of accidental damage to healthy tissue during/following the treatment process, and maximises the number of cancer cells destroyed", says Dr Till Medinger, PhotoBiotics' Chairman. "Without targeting, the drugs remain circulating in the body, causing painful light-induced skin damage to patients if they go outdoors. Our targeting technology sidesteps this problem, ensuring the drugs leave the body soon after light treatment."

But there is an added bonus to PhotoBiotics' technology announced last year at three prestigious international scientific meetings.<sup>2</sup> Dr Mahendra Deonarain, PhotoBiotics' Chief Scientist takes up the story. "Quite counter-intuitively, our research team discovered that without affecting their excellent targeting properties, small antibody fragments can have many more drug molecules attached to them, than can be coupled to much larger whole antibodies. It is this highly serendipitous discovery that has helped make our technology truly innovative".

*BioWorld Today* cited PhotoBiotics – a spin-out company from Imperial College London - as one of the top 200 innovative companies 'leading a new wave of biotechnology development'.<sup>3</sup> Says Dr Medinger, "The US patent grant and our initial highly promising results,<sup>4-6</sup> are a thumbs up to complete further pre-clinical studies, and take our technology forward into clinical trials. We are also developing other therapeutic applications of our technology, and expanding into the lucrative medical diagnostic imaging market."

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### Notes for Editors:

1. See patent number **AU2002321496B** at the site, <http://gb.espacenet.com/>
2. At the 237th American Chemical Society's meeting in Salt Lake City, 22nd – 26th March 2009: the 26th International Conference on Advances in the Application of the Monoclonal Antibodies in Clinical Oncology and Symposium on Cancer Stem Cells, Corfu, Greece, 22nd-24th June 2009: the 13th Congress of the European Society for Photobiology (in conjunction with the 2nd Conference of the European Platform for Photodynamic Medicine (EPPM)),  
Wroclaw Poland 5th-10th September.
3. 'Innovations in Biotechnology 2008: Development-Stage Companies and Scientific Findings Leading the Way', *BioWorld Today*, June 2008. [http://www.bioworld.com/servlet/com.accumedia.web.Dispatcher?next=S08438\\_6064](http://www.bioworld.com/servlet/com.accumedia.web.Dispatcher?next=S08438_6064).
4. 'Towards recombinant antibody-fragment targeted photodynamic therapy.' *Science Progress* 2008; **91**(3): 241-263.
5. 'Targeted photodynamic therapy with multiply loaded recombinant antibody fragments.' *International Journal of Cancer* 2008; **122**: 1155-1163.
6. 'Fluorescence characterisation of multiply-loaded anti-HER2 single-chain Fv-photosensitiser conjugates suitable for photodynamic therapy'. *Photochemical and Photobiological Sciences*. 2007; **6**: 933-939.

### About PhotoBiotics (see [www.photobiotics.com](http://www.photobiotics.com))

Photobiotics is a biotech spin-out company from Imperial College London developing novel biologically-targeted agents that specifically seek out and destroy diseased cells when irradiated with light. Potential applications of this new technology include the diagnostic imaging and therapy of cancer, restenosis following angioplasty, various proliferative skin conditions, or as 'irresistible antibiotics' and many more. Lead products include ProstaLite, for prostate cancer, and a novel targeted contrast agent for MRI (magnetic resonance imaging). PhotoBiotics is highly distinctive in possessing a unique integrated multidisciplinary capability involving chemistry; laser physics and biology.