



Ontario Centres of  
Excellence

Where Next Happens

# Light Therapy

**“The growth of photodynamic therapy in Ontario, from research to application, is an excellent example of how continued funding from the Ontario Centres of Excellence to an important science endeavor can generate a health benefit as well as long term economic benefits.”**

**Dr. Brian Wilson, Princess Margaret Hospital**

A collaboration of scientists, clinicians and industry is offering hope for cancer patients with a new treatment called photodynamic therapy. The process either uses light-activated drugs to target cancer, or irradiates a tumour with light. For treating prostate cancer, researchers at Princess Margaret Hospital are using a new drug called **TOOKAD** in the process that is even more advanced, as it only targets blood vessels, and quickly leaves the body so as to reduce long-term side effects.

With support from Ontario Centres of Excellence (OCE) for development and commercialization of photodynamic light therapy research to the University Health Network's Laboratory for Applied Biophotonics (LAB), Ontario is benefiting in a number of ways from the growth of photodynamic therapy.

Professor Brian Wilson and his team of scientists at the Princess Margaret Hospital (part of the University Health Network) have been researching photodynamic therapy for more than a decade. With OCE assistance, LAB has been instrumental in pushing photodynamic therapy from a novel research topic to clinical application for the treatment of prostate cancer.

“The success does not end there,” says Dr. Wilson. “The French pharmaceutical company Negma recognized the strength of this research at the University Health Network and initiated preclinical studies in 1999, of which several were performed by LAB. We are attracting more research investment and recognition because of the expertise we have built, and continue to build, in this area of treatment.”

Negma chose University Health Network as the site of the first clinical trials with **TOOKAD**, partly on the basis of the physics and device support offered by LAB and partly based on the strength of the clinical team, led by Dr. John Trachtenberg, head of Urology and principle investigator on the clinical trials.

Two phases of clinical trials have been completed treating over 40 men with recurrent prostate cancer. A further validation phase, set to start in 2006, will treat another 80 patients. The trials not only offer hope to prostate patients, they have injected an estimated \$1 million into the Ontario economy.

OCE is one of the few publicly funded institutions that makes connections from university research to marketplace. It helps make sure that innovative science and technology can have what is needed to become profitable new businesses.

Aside from building treatment monitoring devices and providing laser support in the operating room, LAB is also helping Negma form partnerships with Ontario companies, such as CADMIT, where software is being developed for planning treatments using photodynamic light therapy. OCE had previously supported a collaboration between CADMIT and the biophotonics group on the software development. The treatment planning software is now being used in the clinical trials for patient-specific treatment plans and is crucial in planning treatments and analyzing results. Once complete, it is expected that Ontario companies such as CADMIT will offer the complete treatment planning and dosimetry package as a product.

OCE funding of specific projects with company partners and continued support of LAB has been leveraged with the resources of University Health Network to quickly capture opportunities, create partnerships, generate economic activity and benefit the health of Ontario citizens. The presence of these clinical trials has been crucial to the development of clinical photodynamic light therapy in Ontario and, thanks to OCE, the supporting industry around it.