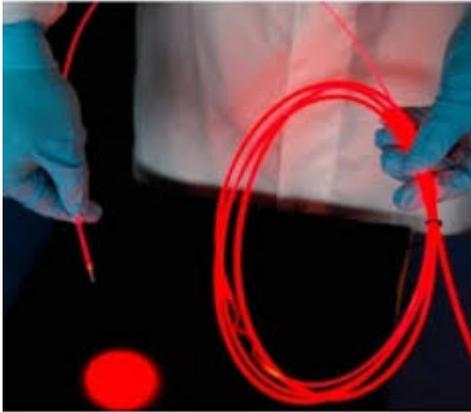


Let there be Theralase's light, lasers, and anti-cancer compounds



Theralase Technologies Inc. (TSXV: TLT), had not one but two promising announcements last week on [May 12th](#) and [14th](#), regarding their anti-cancer drug, TLD-1433, a photodynamic therapy (PDT). As a result the stock was up from 30c on the 12th to 42c on the 14th, and at 37c on Friday the 15th.

Perhaps the lights are now shining on the potential for this company, and light activated drugs to make cancer treatments less harsh, less invasive and quicker. They plan these treatments for people, companion animals, and equine applications.

The news was that TLD-1433, is ready to be manufactured for human trials pending Health Canada's approval. Then two days later they announced that not only is the drug's cancer-cell killing ability light activated, but the cells that are targeted by the drug fluoresce, which means they emit light. This makes cancer cells easier to spot and makes it possible to know if all the cells that the drug targeted have been removed. It also makes it possible for oncologists to spot cancer cells and micro-metastases too small to be seen by the eye. This means that the drug can be used as a diagnostic tool, and a treatment for cancer.

The main function of this drug is for non-muscle invasive bladder cancer (NMIBC), a deadly form of cancer. It takes about 60 minutes for the drug to diffuse into bladder cancer cells. Then there is a visual analysis for the fluorescence by

a uro-oncologist, then laser-light activation for about 30 minutes. This process triggers apoptosis (natural cell death). Then the bladder can be checked for the fluorescent marker to see if all the cancer cells that absorbed the drug have been destroyed.

The process is non-immunosuppressive, meaning it stimulates the body's own ability to defend itself. These types of drugs are called photo-dynamic compounds (PDC). This therapy is a form of phototherapy using nontoxic, light-sensitive compounds, or photosensitizers, which are then exposed selectively to light. When exposed to a specific wavelength of light, they produce a form of oxygen that kills nearby cancer cells. It is also sometimes called photo-chemotherapy, but is much easier on the body than traditional chemotherapy. It has no long-term side effects when used properly, it's less invasive than surgery, and it usually takes only a short time and is most often done as an outpatient. It can be targeted very precisely, and unlike radiation, PDT can be repeated many times at the same site if needed, and there's little or no scarring after the site heals. And it often costs less than other cancer treatments.

Theralase has two complimentary areas of activity, Combining laser technology with photodynamic compounds (PDCs), such as TLD-1433. This reinforces the body's natural bio-destructive capabilities (stimulating the body's own ability to defend itself), including destruction of cancer cells, bacteria, viruses and fat cells. Theralase [says](#) that their lasers penetrate deeper – up to 10 cm (4 in) below the skin surface and heal tissue faster than any other cold laser on the market. As well, Theralase operates a full service medical rehabilitation clinic in Toronto, for training and educating health-care practitioners. Theralase's strategy in oncology is to continue the research development of anti-cancer products with transition metal –based PDC's, and other, new anti-cancer products, and to build a commercial platform in Canada and US

for clinical use worldwide.

As an aside it is interesting that light helps stimulate cancer cell death. Everyone has become more aware of the role light plays in our health, especially in Canada where we cannot make Vitamin D from the sun all year. According to the Canadian Cancer Society's website, The International Agency for Research on Cancer (IARC), concluded in a 2008 report that there is a relationship between low vitamin D and colorectal cancer. The link to vitamin D deficiency and several other cancers is still being studied. It is now recommended that northerners take significant supplements of vitamin D in the winter. Vitamin D can only be made by the sun all year between the latitudes of 35 degrees north, and south. And cancer rates are higher outside those regions, and lower in the tropics, and yet the spending on health care in those regions is the reverse.

It isn't sun light that causes cancer, but a lack of it, it would seem. It's not sun that's bad, but rather getting burned that puts us at risk. Sensible amounts of light can do a great deal of good and Theralase is showing this with its' light activated, fluorescing, anti-cancer therapies.