Theralase Anti-Cancer Drugs Independently Verified and Validated

Toronto, Ontario – August 22, 2017, Theralase Technologies Inc. (“Theralase®” or the “Company”) (TSXV: TLT) (OTCQX: TLTFF), a leading biotech company focused on the commercialization of medical lasers to eliminate pain and the development of Photo Dynamic Compounds (“PDCs”) to destroy cancer, announced today that its patented, lead anti-cancer drug, TLD-1433, and associated family of compounds, have been independently verified and validated in a peer-reviewed publication.

A detailed computational investigation (“Study”) by Marta Alberto and coworkers entitled “Theoretical Exploration of Type I/Type II Dual Photoreactivity of Promising Ru(II) Dyads for PDT Approach”, appearing in the peer-reviewed American Chemical Society (“ACS”) journal Inorganic Chemistry, has independently verified and validated the unique photophysical properties of Theralase’s lead Photo Dynamic Compound (“PDC”), TLD-1433 and associated family of compounds.

The Study can be found at the following link.

http://pubs.acs.org/doi/abs/10.1021/acs.inorgchem.6b01782

The Study details how Dr. Sherri McFarland (“McFarland”) has pioneered the use of specialized excited states for dual-mode Type I (oxygen independent) / II (oxygen dependent) photoreactivity as a means of creating novel classes of PDCs with potencies that are orders of magnitude greater than those of traditional photosensitizers used for Photo Dynamic Therapy (“PDT”).

The most advanced PDC, TLD-1433, developed by McFarland and Theralase, has successfully achieved the primary, secondary and exploratory endpoints in the first part of a Phase 1b human clinical trial, at the Maximum Recommended Starting Dose (0.35 mg/cm²) (“MRSD”) in the first 3 patients treated, for Non-Muscle Invasive Bladder Cancer (“NMIBC”), evaluated at 90 days post treatment.

The elegant computational Study on the family of PDCs, which includes TLD-1433, has used the orthogonal approach of Time-Dependent Density Functional Theory (“TDDFT”) to quantum-mechanically validate McFarland’s experimental findings with regard to Type I/II dual-mode PDT effects and highly specialized excited states.

The Study highlights the ability of TLD-1433, and its associated family of PDCs, to invoke PDT effects even at low oxygen concentrations by exploiting multiple PDT pathways and further validates, on a very sophisticated level, the criteria McFarland previously outlined for producing these unique effects. The unprecedented PDT potencies and unique dual-mode mechanisms of the McFarland-Theralase PDCs are well positioned to finally bring PDT to the forefront of cancer therapy.

Currently, McFarland and Theralase continue to push the boundaries of PDC development by introducing PDC supercatalysts. These so-called supercatalysts maintain dual-mode Type I/II photoreactivity and produce femtomolar PDT effects with no sacrificial co-catalysts. These first-of-their-kind PDCs exploit the fundamental principles of photophysics and supercatalysis to achieve extraordinarily large therapeutic effects.
In comparative analysis evaluations completed by McFarland, the Theralase PDCs are approximately a billion times more potent than a commonly used anti-cancer chemotherapy drug, Cisplatin, when laser light activated.

**Human melanoma cells (SKMEL28) dosed with PDC supercatalyst (left) versus cisplatin (right)**

The clinical utility of PDC supercatalysts cannot be understated, having the potential to overcome variations in light dosimetry and other issues that have prohibited the application of PDT to most cancers.

Theralase and McFarland firmly believe that these PDCs and the laser light systems used to activate them are the future of PDT in the destruction of cancer.

Theralase and McFarland are continuing their highly productive collaboration that has already resulted in one PDC in a human clinical trial for NMIBC, by building a pipeline of PDCs and associated laser light systems, specifically designed to activate the PDCs, for various clinical applications.

Theralase and McFarland are developing PDCs from a tumour-centered approach for personalized medicine, with a focus on brain and lung cancer as the most logical next-generation targets.

Sherri McFarland, PhD, Professor, Department of Chemistry and Biochemistry, The University of North Carolina at Greensboro stated that, “The orthogonal third-party study on TLD-1433 and related PDCs computationally validates the structure-activity relationships that we have already determined experimentally, providing theoretical support for the potent Type I/II dual-mode PDT effects that are now being realized with success in patients with NMIBC as part of the Phase Ib clinical trial.”

Arkady Mandel, MD, PhD, D.Sc., Chief Scientific Officer of Theralase stated that, “The latest computational investigation authored and researched independently, provides further support for what we already know, TLD-1433, and its associated family of PDCs, are world-class anti-cancer drugs that have been proven in the first three patients treated in a Phase Ib clinical trial, at the MRSD, to be safe and effective in preventing the recurrence of NMIBC, evaluated at 90 days post treatment.”

Roger Dumoulin-White, President and CEO of Theralase stated that, “The PDCs that Theralase and McFarland have researched and developed have proven to be very strong anti-cancer drugs in initial
Press Release

clinical studies. We look forward to successfully expanding the platform of PDCs, and the laser light systems that activate them, for various clinical oncology applications, as our clinical program matures.”

About Theralase Technologies Inc.
Theralase Technologies Inc. (“Theralase®” or the “Company”) (TSXV: TLT) (OTCQX: TLTFF) in its Therapeutic Laser Technology (“TLT”) Division designs, manufactures, markets and distributes patented super-pulsed laser technology indicated for the treatment of chronic knee pain, and in off-label use, the elimination of pain, reduction of inflammation and dramatic acceleration of tissue healing for numerous nerve, muscle and joint conditions. Theralase’s Photo Dynamic Therapy (“PDT”) Division researches and develops specially designed molecules called Photo Dynamic Compounds (“PDCs”), which are able to localize to cancer cells and then when laser light activated, effectively destroy them.

Additional information is available at www.theralase.com and www.sedar.com.

This news release contains “forward-looking statements” which reflect the current expectations of management of the Corporation’s future growth, results of operations, performance and business prospects and opportunities. Such statements include, but are not limited to, statements regarding the proposed use of proceeds. Wherever possible, words such as "may", "would", "could", "should", "will", "anticipate", "believe", "plan", "expect", "intend", "estimate", "potential for" and similar expressions have been used to identify these forward-looking statements. These statements reflect management’s current beliefs with respect to future events and are based on information currently available to management. Forward-looking statements involve significant risks, uncertainties and assumptions. Many factors could cause the Corporation’s actual results, performance or achievements to be materially different from any future results, performance or achievements that may be expressed or implied by such forward-looking statements; including, without limitation, those listed in the filings made by the Corporation with the Canadian securities regulatory authorities (which may be viewed at www.sedar.com). Should one or more of these risks or uncertainties materialize, or should assumptions underlying the forward looking statements prove incorrect, actual results, performance or achievements may vary materially from those expressed or implied by the forward-looking statements contained in this news release. These factors should be considered carefully and prospective investors should not place undue reliance on the forward-looking statements. Although the forward-looking statements contained in the news release are based upon what management currently believes to be reasonable assumptions, the Corporation cannot assure prospective investors that actual results, performance or achievements will be consistent with these forward-looking statements. The Corporation disclaims any intention or obligation to revise forward-looking statements whether as a result of new information, future developments or otherwise except as required by law. All forward-looking statements are expressly qualified in their entirety by this cautionary statement.

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