

COMPANY SUMMARY

Onconova Therapeutics, Inc. is a private, development-stage pharmaceutical company focused on discovering and developing novel products to treat cancer and radiation injury. The core competency of Onconova revolves around a proprietary medicinal chemistry library, comprised of more than 140 privileged chemotypes and validated by three clinical-stage products. The most advanced product, rigosertib (ON 01910.Na), is in a pivotal phase III trial under a Special Protocol Assessment (SPA) from the U.S. FDA, with orphan drug designation for myelodysplastic syndromes (MDS, a type of blood cancer). A phase II/III trial with rigosertib in pancreatic cancer and a phase II study in ovarian cancer are also underway. A second anti-cancer agent, ON 013105, currently in a phase I trial for lymphoma, and a radiation protection drug, Ex-RAD[®] (ON 01210.Na), also in phase I, round out the clinical pipeline. The Onconova product portfolio is supported by several pre-clinical candidates, more than 100 issued patents, and a focused internal R&D engine.

Onconova is targeting unmet indications in cancer and the urgent need for medical countermeasures to combat nuclear/radiation threats, to ensure rapid approval and first-to-market advantage for its advanced products. More than 400 patients and healthy volunteers have been enrolled in clinical studies and these trials have helped establish the safety and tolerability of the first-in-class cancer drugs, and the lack of toxicity of the radiation protection agent. Evidence of significant clinical activity of rigosertib in MDS patients has led to a phase III trial (the *ONTIME* trial) in the U.S. and Europe. NDA submission to FDA of rigosertib for MDS is slated for 2013. Onconova is well positioned to secure additional contracts for its radiation protection drug within the next twelve months. Onconova has raised more than \$115 Million from institutional and individual investors, with a significant contribution from non-dilutive grants and government contracts.

BACKGROUND: Onconova, located in Newtown, PA and Pennington, NJ, was founded in 1998, based on the discoveries of Dr. E. P. Reddy, a world-renowned scientist in molecular oncology and Director of the Experimental Therapeutics Institute at Mount Sinai School of Medicine in New York. Onconova has broad-based intellectual property protection, with composition-of-matter, process, and method of treatment claims for its product portfolio. Over 100 U.S. and international patents have been issued.

RIGOSERTIB: BROAD-SPECTRUM ANTI-CANCER DRUG

Rigosertib (ON 01910.Na) is an inhibitor of pathways critical to the growth and proliferation of cancer cells. Extensive phase I and phase II clinical studies have explored various dose regimens of an injectable formulation of rigosertib (administered alone or in combination with other chemotherapeutic agents) in patients with limited approved treatment options for their diseases. These results indicate that overall, rigosertib is well-tolerated. Furthermore, rigosertib has demonstrated significant (at least 50% blast reduction) improvement in bone marrow blast count in 53% of MDS patients, and greater than 50% reduction in CA 19-9 tumor marker in about 36% of patients with advanced pancreatic cancer. The phase III *ONTIME* and phase II/III *ONTRAC* studies of rigosertib are designed to address the unmet medical needs for MDS and pancreatic cancer patients, respectively. Clinical testing of an orally-administered formulation of rigosertib in cancer patients has begun.

ON 013105 ANTI-CANCER AGENT FOR LYMPHOMA

A critical defect in many cancer cells results in over-expression of cyclin D1, a protein essential for normal cell division. Treatment of these cells with ON 013105 causes reduction in cyclin D1 levels by disrupting several pathways, resulting in programmed cell death. ON 013105 is being evaluated initially in a phase I trial underway for B-cell lymphomas, including a particularly deadly type of non-Hodgkin's lymphoma, mantle cell lymphoma (MCL). MCL is characterized by the faulty regulation of the cell cycle due to over-expression of cyclin D1. Study of MCL will provide "proof of concept" and lead to further investigation of ON 013105 in multiple myeloma, MDS, and certain solid tumors, all of which share a cyclin D1-related mechanism.

Ex-RAD[®] RADIATION PROTECTION AGENT

Ex-RAD is a radiation protection drug being developed in collaboration with the U.S. Department of Defense under the FDA "Animal Rule," which permits drug marketing approval after phase I safety trials (without phase II or phase III trials), based on evidence of efficacy in animals. *Ex-RAD* is an enhancer of DNA repair and protects animals against harmful radiation in models of tissue and whole body radiation injury. Three phase I trials in healthy volunteers have been completed with an injectable formulation of *Ex-RAD*. Following increasing single or double doses, the drug was well-absorbed, with no evidence of systemic side effects and with good local tolerance. An IND for orally-administered *Ex-RAD* is now active. *Ex-RAD* is expected to be funded by government contracts from the U.S. Departments of Defense and Health and Human Services.

ALLIANCES

- The Leukemia and Lymphoma Society (LLS) is providing \$10 Million for the pivotal trial of rigosertib in MDS
- SymBio Pharmaceuticals Ltd is collaborating in the development and commercialization of rigosertib in Japan/Korea
- The U.S. Department of Defense has provided more than \$10 Million in funding for *Ex-RAD*

INVESTMENT DRIVERS

Significant milestones and value drivers for investors:

- Potential for commercial revenue in the U.S. for rigosertib by 2013
- Multiple high-value, late stage commercial opportunities in the rigosertib program
- *Ex-RAD* program expected to receive additional contract funding in 2012
- Productive core chemistry engine for expansion of pipeline

FOR ADDITIONAL INFORMATION

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