September 7, 2010

Tekmira Pharmaceuticals Receives Clearance from FDA to Initiate TKM-PLK1 Phase 1 Clinical Trial

VANCOUVER, BC — Tekmira Pharmaceuticals Corporation (TSX: TKM), a leader in RNA interference (RNAi) therapeutics, today announced that its Investigational New Drug (IND) application for TKM-PLK1 has been cleared by the United States Food and Drug Administration (FDA) allowing Tekmira to initiate a Phase 1 human clinical trial. Dr. Mark J. Murray, Tekmira's President and CEO, said, "We are pleased to have received FDA approval of our IND for TKM-PLK1. With this approval, we remain on track to achieve the company's milestone of initiating a Phase 1 human clinical trial in patients with advanced solid tumors before the end of the year."

TKM-PLK1 is being developed as a treatment for patients with advanced solid tumor cancers who are not well served by current therapy. The Phase 1 clinical trial will be an open label, non-randomized, dose finding study designed to evaluate the safety, tolerability and pharmacokinetics of TKM-PLK1. TKM-PLK1 targets polo-like kinase 1, or PLK1, a cell cycle protein implicated in tumor cell proliferation and a validated oncology target. Inhibition of PLK1 prevents the tumor cell from completing cell division, resulting in cell cycle arrest and death of the cancer cell. PLK1 has been implicated as a target in a number of significant cancer indications including colorectal, breast, non-small cell lung, and ovarian cancers. These diseases collectively affect over five hundred thousand new patients each year in the United States.

TKM-PLK1 consists of a small interfering RNA (siRNA) designed to silence PLK1 encapsulated in a Tekmira proprietary lipid nanoparticle (LNP) formulation. TKM-PLK1 has been shown in preclinical animal studies to selectively kill cancer cells, while sparing normal cells in healthy tissue. The therapeutic activity of TKM-PLK1 has been demonstrated in preclinical models of liver cancer as well as tumors outside the liver.

TKM-PLK1 is licensed under Alnylam Pharmaceuticals, Inc. (Nasdaq: ALNY) intellectual property. Additionally, Alnylam has the right to co-develop TKM-PLK1 and retains that right until the start of a TKM-PLK1 Phase 2 clinical trial.

About RNAi and Tekmira's LNP Technology
RNAi therapeutics have the potential to treat a broad number of human diseases by "silencing" disease causing genes. The discoverers of RNAi, a gene silencing mechanism used by all cells, were awarded the 2006 Nobel Prize for Physiology or Medicine. RNAi therapeutics, such as "siRNAs," require delivery technology to be effective systemically. LNP technology is one of the most widely used siRNA delivery approaches for systemic administration. Tekmira's LNP technology (formerly referred to as stable nucleic acid-lipid particles or SNALP) encapsulates siRNAs with high efficiency in uniform lipid nanoparticles which are effective in delivering RNAi therapeutics to disease sites in numerous preclinical models. Tekmira's LNP formulations are manufactured by a proprietary method which is robust, scalable and highly reproducible and LNP-based products have been reviewed by multiple FDA divisions for use in clinical trials. LNP formulations comprise several lipid components that can be adjusted to suit the specific application.

About Tekmira
Tekmira Pharmaceuticals Corporation is a biopharmaceutical company focused on advancing novel RNAi therapeutics and providing its leading lipid nanoparticle delivery technology to pharmaceutical partners. Tekmira has been working in the field of nucleic acid delivery for over a decade and has broad intellectual property covering LNP technology. Further information about Tekmira can be found at www.tekmirapharm.com. Tekmira is based in Vancouver, B.C.

Forward-looking Statements and Information
This press release contains "forward-looking statements" or "forward-looking information" within the meaning of applicable securities laws (collectively, "forward-looking statements"). Forward-looking statements are generally identifiable by use of the words "believes," "may," "plans," "will," "anticipates," "intends," "budgets", "could", "estimates", "expects", "forecasts", "projects" and similar expressions, and the negative of such expressions. Forward-looking statements in this news release include statements about Tekmira's strategy, future operations, clinical trials, prospects and plans of management; Tekmira's RNAi product development programs; the effects of TKM-PLK1 as a treatment of cancer; and the timing of the initiation of a clinical trial for TKM-PLK1.

With respect to the forward-looking statements contained in this news release, Tekmira has made numerous assumptions regarding, among other things: LNP's status as a leading RNAi delivery technology; the effectiveness of Tekmira's TKM-PLK1 product candidate as a treatment for cancer; and the timing of initiation of a clinical trial for TKM-PLK1. While Tekmira

considers these assumptions to be reasonable, these assumptions are inherently subject to significant business, economic, competitive, market and social uncertainties and contingencies.

Additionally, there are known and unknown risk factors which could cause Tekmira's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements contained herein. Known risk factors include, among others: the possibility that other organizations have made advancements in RNAi delivery technology that Tekmira is not aware of and Tekmira's development programs will not result in expected results on a timely basis, or at all.

A more complete discussion of the risks and uncertainties facing Tekmira appears in Tekmira's Annual Information Form dated March 31, 2010 available at www.sedar.com. All forward-looking statements herein are qualified in their entirety by this cautionary statement, and Tekmira disclaims any obligation to revise or update any such forward-looking statements or to publicly announce the result of any revisions to any of the forward-looking statements contained herein to reflect future results, events or developments, except as required by law.

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