Tekmira Provides Corporate Update on RNAi Therapeutics Pipeline

October 8, 2013

Tekmira Builds Upon Extensive Experience in Anti-Viral Therapeutics by Adding Therapeutics Addressing Hepatitis B and Marburg Virus to Product Pipeline

TKM-ALDH2, an RNAi Therapeutic for Alcohol Use Disorder, Shows Promise of Overcoming Limitations of Existing Treatments, and Provides Partnering Opportunity

Preclinical Research Programs Focus on Rare and Orphan Diseases Including Glycogen Storage Diseases and Rare Forms of Hypertriglyceridemia

Webinar at 4:00 pm Eastern Time Today

VANCOUVER, British Columbia, Oct. 8, 2013 (GLOBE NEWSWIRE) -- Tekmira Pharmaceuticals Corporation (Nasdaq:TKMR) (TSX:TKM), a leading developer of RNA interference (RNAi) therapeutics, today announced the key programs and goals into 2014 for its RNAi therapeutic product pipeline.

"As RNAi technology has come of age, so has Tekmira evolved from a platform company to a product-focused company. We have outlined today a robust, diverse pipeline of therapeutically important and commercially valuable clinical programs advancing to near term inflection points. Specifically, we intend to focus on diseases where the scientific and medical rationale for using RNAi is strong, where our technology can best perform, and where there is high unmet medical need and significant commercial markets," said Dr. Mark J. Murray, Tekmira's President and CEO.

"Our plans announced today significantly add breadth to our existing pipeline, which includes our TKM-PLK1 oncology program already in a Phase I/II clinical trial. Our new TKM-HBV program, along with our work addressing the Marburg virus, benefit from our immense experience in the anti-viral sector and our existing TKM-Ebola program. We are also excited by the strength of the preclinical data around our TKM-ALDH2 program, and we believe this unique RNAi therapeutic could address a significant segment of this market, making it an ideal candidate for partnering and other sources of funding for clinical development. Our research team continues to generate data to support the advancement of our most promising of preclinical targets, especially those where the molecular target is found in the liver, and the disease is rare. We will be in a position to identify another development candidate from these activities in 2014," added Dr. Murray.

Highlights from Corporate Update

Tekmira anticipates the following milestones related to its product pipeline:

- **TKM-PLK1:** Results from ongoing Phase I/II clinical trial in GI-NET and ACC patients by mid-2014, and if supported by the data, initiate a pivotal trial in GI-NET by the end of 2014. Initiate a Phase I/II clinical trial in Hepatocellular Carcinoma in the first half of 2014.
- **TKM-Ebola**: Phase I clinical trial to be initiated in the first quarter of 2014 with data available in the second half of 2014.
- **TKM-HBV**: Complete preclinical work and file IND in the second half of 2014, in order to advance TKM-HBV into chronically infected HBV patients with Phase 1 data available in 2015.
- **TKM-ALDH2:** Complete preclinical work and file IND in second half of 2014, with Phase I data in healthy volunteers, including proof-of-concept with alcohol challenge available in 2015.
- **Next Product Candidate:** Nominate next product candidate for development in 2014 from broad preclinical research efforts with focused work in rare and orphan diseases, including glycogen storage diseases and rare genetic forms of hypertriglyceridemia.

Tekmira's RNAi Product Pipeline

TKM-PLK1, RNAi oncology therapeutic

Tekmira's oncology product candidate, TKM-PLK1, targets polo-like kinase 1 (PLK1), a protein involved in tumor cell proliferation and a validated oncology target. Inhibition of PLK1 expression prevents the tumor cell from completing cell division, resulting in cell cycle arrest and death of the cancer cell. Evidence that patients with elevated levels of PLK1 in their tumors exhibit poorer prognosis and survival rates has been documented in the medical literature.

Based on the encouraging results from the dose escalation portion and expansion cohort from its Phase I TKM-PLK1 clinical trial, where patients with GI-NET and ACC have demonstrated objective clinical benefit, Tekmira has initiated a Phase I/II clinical trial with TKM-PLK1, which is enrolling patients with advanced Gastrointestinal Neuroendocrine Tumors (GI-NET) or Adrenocortical Carcinoma (ACC). Forty percent (6 out of 15) of patients evaluable for response, treated at a dose equal to or greater than 0.6 mg/kg, showed clinical benefit. Of the 36 patients enrolled, three out of the four ACC patients (75%) treated with TKM-PLK1 achieved stable disease, including one patient who saw a 19.3% reduction in tumor size and is still on study receiving TKM-PLK1. Of the two GI-NET patients enrolled, both experienced clinical benefit: one patient had a partial response based on RECIST criteria, and the other GI-NET patient achieved stable disease and showed a greater than 50% reduction in Chromogranin-A (CgA) levels, a key biomarker used to predict clinical outcome and tumor response.

The TKM-PLK1 GI-NET and ACC Phase I/II clinical trial is a multi-center, single arm, open label study designed to measure efficacy using RECIST

and tumor biomarkers for GI-NET patients, as well as to evaluate the safety, tolerability and pharmacokinetics of TKM-PLK1. TKM-PLK1 will be administered weekly with each four-week cycle consisting of three once-weekly doses followed by a rest week. It is expected that approximately 20 patients with advanced GI-NET or ACC tumors will be enrolled in this trial, with a minimum of 10 GI-NET patients to be enrolled. Tekmira expect results from this trial by mid-2014, and if supported by the data, to commence a pivotal trial in GI-NET before the end of 2014.

In the first half of 2014, Tekmira expects to initiate another Phase I/II clinical trial with TKM-PLK1, enrolling patients with Hepatocellular Carcinoma (HCC). This clinical trial will be a multi-center, single arm, open label dose escalation study designed to evaluate the safety, tolerability and pharmacokinetics of TKM-PLK1 as well as determine the maximum tolerated dose in HCC patients and measure the anti-tumor activity of TKM-PLK1 in HCC patients.

TKM-Ebola, RNAi Therapeutic for the treatment of Ebola Virus in collaboration with the U.S. Department of Defense

TKM-Ebola, an anti-Ebola viral therapeutic, is being developed under a contract with the U.S. Department of Defense's (DoD) Joint Project Manager Medical Countermeasure Systems (JPM-MCS), with a total contract value of approximately $140 million. Earlier preclinical studies were published in the medical journal *The Lancet* demonstrating that when siRNA targeting the Ebola virus and delivered by Tekmira's LNP technology were used to treat previously infected non-human primates, the result was 100 percent protection from an otherwise lethal dose of Zaire Ebola virus (Geisbert et al., The Lancet, Vol 375, May 29, 2010).

Tekmira's productive collaboration with the JPM-MCS was recently modified and expanded to include significant advances in LNP formulation technology since the initiation of the program in 2010. Tekmira has initiated pre-clinical, chemistry, manufacturing and control studies in order to support the use of the enhanced product in a Phase I clinical trial, which is expected to be initiated in the first quarter of 2014 with data available in the second half of 2014.

TKM-Marburg, RNAi therapeutic for the treatment of Marburg virus

Like Ebola, Marburg is a member of the filovirus family of hemorrhagic fever viruses. Regularly occurring natural outbreaks of the Marburg Angola strain have resulted in mortality in approximately 90% of infected individuals, matching that of the most lethal Ebola strains, while in laboratory settings experimental infection with either virus is uniformly lethal. There are currently no approved therapeutics available for the treatment of Marburg infection.

Newly presented data from a collaboration between Tekmira and the University of Texas Medical Branch (UTMB) showed 100% survival in non-human primates infected with the Angola strain of the Marburg virus in two separate studies. In the first study, 100% survival was achieved when dosing at 0.5 mg/kg TKM-Marburg began one hour after infection with otherwise lethal quantities of the virus. Dosing then continued once daily for seven days. In the second study, 100% survival was achieved even though treatment did not begin until 24 hours after infection.

These new results build upon a study published last month in the Journal of Infectious Disease showing 100% protection in guinea pig models of infection with Angola, Ci67 and Ravn strains of the Marburg virus using a broad spectrum RNAi therapeutic enabled by Tekmira's LNP. In 2010, Tekmira and UTMB were awarded a National Institutes of Health (NIH) grant to support research to develop RNAi therapeutics to treat Ebola and Marburg hemorrhagic fever viral infections. Tekmira expect to continue to build on these data and pursue additional funding opportunities for TKM-Marburg.

TKM-HBV, RNAi therapeutic for the treatment of Hepatitis B virus

There are over 350 million people infected globally with Hepatitis B virus (HBV). In the United States there are approximately 1.4 million HBV chronically infected individuals.

Tekmira's extensive experience in the anti-viral arena has been applied to its new TKM-HBV program, and the development of an RNAi therapeutic for the treatment of chronic Hepatitis B infection. Tekmira is focused on addressing the unmet need of eliminating HBV surface antigen expression in chronically infected patients. Small molecule nucleotide therapy is rapidly becoming the standard of care for chronically HBV infected patients. However, many of these patients continue to express a viral protein called surface antigen. This protein causes inflammation in the liver leading to cirrhosis and in some cases to hepatocellular cancer and death. TKM-HBV is designed to eliminate surface antigen expression in these chronically infected patients. The rationale is that by blocking surface antigen — and reducing much of the pathology associated with surface antigen expression — this therapy will also allow these patients a potential to 'sero-convert', or raise their own antibodies against the virus, and effect a functional cure of the infection.

TKM-HBV is being developed as a multi-component RNAi therapeutic that targets multiple sites on the HBV genome. Tekmira previously published work showing that these multi-component payloads can prevent the emergence of viral escape mutants. Because HBV is a viral infection of the liver, the TKM-HBV therapeutic will employ a liver-centric-LNP formulation that is more potent and has a broader therapeutic index than any LNP currently in clinical development.

Tekmira anticipates completing the necessary preclinical work and be in a position to file an IND in the second half of 2014 in order to advance TKM-HBV into chronically infected HBV patients with Phase I data available in 2015.

TKM-ALDH2, RNAi therapeutic for the treatment of Alcohol Use Disorder

In the United States, approximately 18 million people have an alcohol use disorder. Two million of these seek treatment each year, and approximately 350,000 of these patients receive pharmacotherapy for alcohol use disorder. TKM-ALDH2 will be developed for a clearly defined high value segment of the alcohol use disorder market, with a target patient population of educated professionals who have moderate to severe alcohol use disorder.

TKM-ALDH2 is a very unique application of RNAi. It has been designed to knock down or silence the ALDH2 enzyme to induce long term acute sensitivity to ethanol. Aldehyde dehydrogenase 2 (ALDH2) is a key enzyme in ethanol metabolism. Inhibition of aldehyde dehydrogenase 2 activity, through the silencing of ALDH2, results in the build-up of acetaldehyde. Elevated levels of acetaldehyde are responsible for the adverse physiological effects that cause individuals to avoid alcohol consumption. Tekmira has developed extremely potent siRNA payload and combined it with a third generation LNP. Human proof of concept for ALDH2 inhibition already exists in the form of the approved drug Disulfram. However, Disulfram's efficacy suffers from poor compliance because it has to be taken daily. TKM-ALDH2 will induce prolonged ethanol sensitivity and can overcome the compliance limitations.

Tekmira anticipates completing the necessary preclinical work and be in a position to file an IND in the second half of 2014 in order to advance TKM-ALDH2 into a Phase I clinical trial in healthy volunteers. It is expected that proof-of-concept with alcohol challenge including ALDH2 knockdown, acetaldehyde build up and ethanol toxicity can be obtained in the Phase I clinical trial with data available in 2015. Alcohol use disorder represents a significant public health problem, and there are a variety of government funding sources seeking to support new therapeutic strategies and Tekmira will be exploring and leveraging these partnering opportunities.

Other Research Programs

Tekmira is currently evaluating several preclinical candidates with potential in diverse therapeutic areas using key criteria to prioritize efforts. Given the extremely high efficiency of delivery for third generation liver-centric LNP formulations, Tekmira is focused on rare diseases where the molecular target is found in the liver, where early clinical proof-of-concept can be achieved and where there may be accelerated development opportunities. Two areas of particular interest are glycogen storage diseases and rare forms of hypertriglyceridemia. The Tekmira research team will continue to generate data to support the advancement of the most promising of these targets, and will be in a position to identify another development candidate in 2014.

Financial Guidance

Tekmira's financial guidance remains the same as disclosed in its second quarter financial results, with projections that current funds on hand, plus expected income, including payments from current licensees, collaborative partners and the DoD will be sufficient to last until mid-2015.

Webinar Information

Tekmira will host a web-based seminar (Webinar) to provide a corporate update on its pipeline of therapeutic candidates on Tuesday, October 8, 2013 at 4:00 pm ET / 1:00 pm PT. A live feed of the presentation slides and audio will be available on the "Investors" section of the company's website at www.tekmirapharm.com. To participate in the Webinar, please register at http://investor.arbutusbio.com/events.cfm. Questions can be submitted online during the Webinar using the Q&A tab of the webcast player. A replay of the Webinar will be available on the Tekmira website approximately 24 hours after the event.

About RNAi and Tekmira's LNP

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. Tekmira believes its LNP technology represents the most widely adopted delivery technology for the systemic delivery of RNAi therapeutics. Tekmira's LNP platform is being utilized in multiple clinical trials by both Tekmira and its partners. Tekmira's LNP technology (formerly referred to as stable nucleic acid-lipid particles or SNALP) encapsulates siRNAs with high efficiency in uniform lipid nanoparticles that 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 Alnylam RNAi Technology

Tekmira has licenses to Alnylam RNAi intellectual property for certain siRNA programs.

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 LNPs. Further information about Tekmira can be found at www.tekmirapharm.com. Tekmira is based in Vancouver, B.C.

Forward-Looking Statements and Information

This news 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 the plans of management; RNAi (ribonucleic acid interference) product development programs; estimates of the number of clinical development programs to be undertaken by Tekmira and its product development partners; selection of additional product candidates; timing of release of clinical data; the effects of Tekmira's products on the treatment of cancer, infectious disease, and other diseases; the effects of TKM-PLK1 on the treatment of cancer, including gastrointestinal neuroendocrine tumors (GI-NET), adrenocortical carcinoma (ACC), and hepatocellular carcinoma (HCC); the expected enrollment and timing of results from ongoing TKM-PLK1 ongoing Phase I/II clinical trial in GI-NET and ACC patients, and a pivotal trial in GI-NET initiated by the end of 2014; the expected initiation of a Phase I/II clinical trial with TKM-PLK1 enrolling patients with HCC; the modifications to the TKM-Ebola contract with the U.S. DoD's JPM-MCS office to integrate recent advancements in LNP formulation and manufacturing technology; the initiation of pre-clinical and chemistry, manufacturing and control studies that support the use of the advancements in the TKM-Ebola program; the initiation of a Phase I clinical trial for TKM-Ebola; the quantum and timing of funding that may be provided to Tekmira pursuant to the TKM-Ebola contract with the U.S. DoD's JPM-MCS Office; expected additional data and funding opportunities for TKM-Marburg; the timing and completion of necessary clinical work and an IND filing for TKM-HBV, and the timing of the advancement of TKM-HBV into chronically infected HBV patients in the United States; partnering opportunities for TKM-ALDH2; the expected timing and filing of an IND for TKM-ALDH2, and the timing and availability of Phase I data in healthy volunteers; securing support to defer the cost of clinical development of TKM-ALDH2, including anticipated support from government funding sources; the design and expected commencement of a Phase I clinical trial for TKM-ALDH2; the timing and expected proof of concept for TKM-ALDH2 being obtained in a Phase I clinical trial; further generation of data by Tekmira's research team, and the timing of identification of another development candidate in rare and orphan diseases, including glycogen storage diseases and rare forms of hypertriglyceridemia; statements with respect to projections that current funds of hand, plus expected income, including payments from current licensees, collaborative partners and the DoD will be sufficient to last until mid-2015; and estimates of the length of time Tekmira's business will be funded by its anticipated financial resources.

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 products as a treatment for cancer, infectious disease, or other diseases; the developmental milestones and approvals required to trigger funding for TKM-Ebola from the JPM-MCS program; results in preclinical models are indicative of the potential effect in humans; Tekmira's research and development capabilities and resources; FDA approval with respect to commencing clinical trials; the timing and obtaining of regulatory approvals for Tekmira's products; the timing and results of clinical data releases and use of LNP technology by Tekmira's development partners and licensees; the time required to complete research and product development activities; the timing and quantum of payments to be received under contracts with Tekmira's partners including Alnylam, Spectrum, the DoD, and others; Tekmira's financial position and its ability to execute on its business strategy; and Tekmira's ability to protect its intellectual property rights and not to infringe on the intellectual property rights of others. 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: Tekmira's research and development capabilities and resources may not meet current or expected demand; Tekmira's products may not prove to be effective in the treatment of cancer, infectious disease, or other diseases; Tekmira may not obtain and protect intellectual property rights, and operate without infringing on the intellectual property rights of others; Tekmira may face competition from other pharmaceutical or biotechnology companies and the possibility that other organizations have made advancements in RNAi delivery technology that Tekmira is not aware of; pre-clinical and clinical trials may be more costly or take longer to complete than anticipated and may not generate results that warrant future development of the tested drug candidate; the FDA may determine that the design and planned analysis of Tekmira's clinical trials do not adequately address the trial objectives in support of Tekmira's regulatory submissions; the FDA may not approve the commencement of Tekmira's planned clinical trials or approve the use of Tekmira's products; TKM-PLK1 might not enter into Phase I/II clinical trials in the timeframe anticipated, or at all; there may be no additional indications for TKM-PLK1 Phase I/II development; the DoD may reduce or cancel certain defense spending, including Tekmira's contract to develop TKM-Ebola, or adversely modify the contract with Tekmira; the FDA may refuse to approve TKM-Ebola, or place restrictions on our ability to commercialize TKM-Ebola; Tekmira may not initiate a new TKM-Ebola Phase I clinical trial in the anticipated timeframe, or at all; Tekmira's development partners and licensees conducting clinical trial, development programs and joint venture strategic alliances may not result in expected results on a timely basis, or at all; anticipated payments under contracts with Tekmira's collaborative partners may not be received by Tekmira on a timely basis, or at all, or in the quantum expected by Tekmira; there may be no further additional data and funding opportunities for TKM-Marburg; completion of necessary clinical work and an IND filing for TKM-HBV, and the timing of the advancement of TKM-HBV into chronically infected HBV patients in the United States may not occur and currently anticipated, or at all; Tekmira may never complete any partnering opportunities for TKM-ALDH2; the filing of an IND for TKM-ALDH2, and the timing and availability of Phase I data in healthy volunteers may not occur as currently anticipated, or at all; Tekmira may not be able to secure support to defer the cost of clinical development of TKM-ALDH2, including anticipated support from government funding sources; a Phase I clinical trial for TKM-ALDH2 may not occur as expected, or at all; proof of concept for TKM-ALDH2 may never be obtained in a Phase I clinical trial; Tekmira may not be able to identify another development candidate in rare and orphan diseases, including glycogen storage diseases and rare forms of hypertriglyceridemia as anticipated; payments received from third parties may not be sufficient to fund Tekmira's continued business plan as currently anticipated; future operating results are uncertain and likely to fluctuate; Tekmira may not be able to raise additional financing required to fund further research and development, clinical studies, and obtain regulatory approvals, on commercially acceptable terms or at all; economic and capital market conditions; Tekmira may become subject to product liability or other legal claims for which Tekmira has made no accrual in its financial statements; Tekmira's cash runway may not extend into mid-2015 as anticipated, and may be substantially less than required to continue current operations; and the possibility that Tekmira may not have sufficiently budgeted for expenditures necessary to carry out planned activities.

A more complete discussion of the risks and uncertainties facing Tekmira appears in Tekmira's annual report on Form 20-F for the year ended December 31, 2012 (Annual Report), which is available at www.sedar.com or at www.sec.gov/edgar.shtml. 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.

CONTACT: Investors

Jodi Regts

Director, Investor Relations

Phone: 604-419-3234

Email: jregts@tekmirapharm.com

Media

David Ryan

Longview Communications Inc.

Phone: 416-649-8007

Email: dryan@longviewcomms.ca