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NOVELOS THERAPEUTICS ANNOUNCES ENROLLMENT OF FIRST PATIENT IN BRAIN CANCER TRIAL WITH I-124-CLR1404 (LIGHT) CANCER-TARGETED PET IMAGING AGENT AT UW CARBONE CANCER CENTER

Expects Initial Imaging Results in the Second Quarter of 2012

MADISON, WI, March 15, 2012 – Novelos Therapeutics, Inc. (OTCQX: NVLT), a pharmaceutical company developing novel drugs for treatment and diagnosis of cancer, today announced that the University of Wisconsin Carbone Cancer Center, a leading medical oncology research institution, has enrolled the first patient in a Phase 1-2 positron emission tomography (PET) imaging trial of I-124-CLR1404 (LIGHT), a cancer-targeted PET imaging agent, in patients with primary or metastatic brain cancer. Details of the trial design are available at www.clinicaltrials.gov ID: NCT01540513, or at www.novelos.com in the 'Clinical Trials' section. Lance Hall, M.D., is the trial's principal investigator. This trial is being funded by an Institute for Clinical and Translational Research (ICTR) grant.

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"Despite recent advances in diagnostic and therapeutic techniques, prognosis of patients with many brain tumors, and particularly malignant gliomas, remains dismal. This reflects in part the diagnostic uncertainty in identifying infiltrative tumor growth of malignant gliomas which in turn affects subsequent treatment strategies," said Dr. Hall. "The goals of this study will be to validate uptake of LIGHT in human brain tumors, determine the optimal imaging parameters, and compare tumor volumes and diagnostic accuracy of PET and magnetic resonance imaging (MRI)."

"We are very pleased to be expanding our collaboration with the UW Carbone Cancer Center," said Harry Palmin, President and CEO of Novelos. "We look forward to obtaining initial LIGHT imaging data in the second quarter of 2012 in cancer patients with primary brain tumors and brain metastases. We believe positive data would establish proof-of-concept for LIGHT as a PET imaging agent for this indication, could advance our partnering discussions and could be used to calculate effective doses for Phase 2 clinical trials of I-131-CLR1404 (HOT). HOT is our chemically identical small-molecule, broad-spectrum, cancer-targeted molecular radiotherapeutic that delivers cytotoxic radiation directly and selectively to cancer cells and cancer stem cells."

About LIGHT

LIGHT is a small molecule imaging agent that we believe has first-in-class potential for selective detection of tumors and metastases in a broad range of cancers. LIGHT is comprised of a small, non-pharmacological quantity of CLR1404 (COLD, acting as a cancer-targeted delivery and retention vehicle) labeled with the short-lived radioisotope, iodine-124, a new PET imaging isotope. PET imaging used in conjunction with CT scanning has now become the imaging method of choice in oncology. In studies to date, LIGHT selectively illuminated malignant tumors in 52 of 54 animal models of cancer, demonstrating broad-spectrum, cancer-selective uptake and retention. Investigator-sponsored Phase 1-2 trials of LIGHT as a PET imaging agent are ongoing. The trials include lung cancer, brain cancer and, starting in the second quarter of 2012, other solid tumors. These human trials, if successful, will serve two important purposes. First, they would provide proof-of-concept for LIGHT itself as a PET imaging agent with the potential to supplant the current "gold standard" agent, 18-fluoro-deoxyglucose (FDG), due to what we believe to be LIGHT's superior cancer-specificity and more favorable logistics of clinical use. Second, favorable results would accelerate clinical development of HOT by predicting efficacy and enabling calculation of efficacious doses of HOT for Phase 2 trials.

About the UW Carbone Cancer Center in Madison
The University of Wisconsin Carbone Cancer Center (UWCCC) is recognized throughout the nation as one of the leading innovators in cancer research, quality patient care and active community involvement. It is the only comprehensive cancer center, as designated by the National Cancer Institute, in Wisconsin. An integral part of the UW School of Medicine and Public Health, the UWCCC unites physicians and scientists who work together in translating discoveries from research laboratories into new treatments that benefit cancer patients. To learn more about clinical studies and other initiatives, visit www.uwhealth.org/uw-carbone-cancercenter/for-researchers/uwccc/28373

About Novelos Therapeutics, Inc.
We are a pharmaceutical company developing novel drugs for the treatment and diagnosis of cancer. Our three cancer-targeted compounds are selectively taken up and retained in cancer cells, including cancer stem cells, versus normal cells.

Thus, our therapeutic compounds appear to directly kill cancer cells while minimizing harm to normal cells. This offers the potential for a paradigm shift in cancer therapy by providing efficacy versus all three major drivers of mortality in cancer: primary tumors, metastases and stem cell-based relapse. I-124-CLR1404 (LIGHT) is a small-molecule cancer-targeted PET imaging agent. We believe LIGHT has first-in-class potential and Phase 1-2 clinical trials are ongoing. I-131-CLR1404 (HOT) is a small-molecule, broad-spectrum, cancer-targeted molecular radiotherapeutic that delivers cytotoxic radiation directly and selectively to cancer cells and cancer stem cells. We believe HOT also has first-inclass potential. HOT Phase 1b dose-escalation trial is ongoing and we expect HOT to enter Phase 2 trials in the first quarter of 2013 as a monotherapy for solid tumors with significant unmet medical need, subject to additional funding. CLR1404 (COLD), a cancer-targeted nonradioactive chemotherapy, works primarily through Akt inhibition. We plan to file an IND for COLD in the first quarter of 2013, subject to additional funding. Together, we believe our compounds are able to "find, treat and follow" cancer anywhere in the body in a novel, effective and highly selective way. For additional information please visit www.novelos.com

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This news release contains forward-looking statements. You can identify these statements by our use of words such as "may," "expect," "believe," "anticipate," "intend," "could," "estimate," "continue," "plans," or their negatives or cognates. Such statements are valid only as of today, and we disclaim any obligation to update this information. These statements are only estimates and predictions and are subject to known and unknown risks and uncertainties that may cause actual future experience and results to differ materially from the statements made. These statements are based on our current beliefs and expectations as to such future outcomes. Drug discovery and development involve a high degree of risk. Factors that might cause such a material difference include, among others, uncertainties related to the ability to attract and retain partners for our technologies, the identification of lead compounds, the successful preclinical development thereof, the completion of clinical trials, the FDA review process and other government regulation, our pharmaceutical collaborators' ability to successfully develop and commercialize drug candidates, competition from other pharmaceutical companies, product pricing and third-party reimbursement.