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**TRANSMOLECULAR'S ¹³¹I-TM601 SHOWN TO IMPROVE SURVIVAL IN
RECURRENT MALIGNANT GLIOMA
- Phase 2 Clinical Study Substantiates Peptide's Ability to Deliver Cytotoxic
Payloads to Refractory Tumors**

NEW ORLEANS, October 22, 2009 – TransMolecular, Inc., a developer of innovative oncology drugs through targeted delivery technologies, today announced final results from its Phase 2 clinical study comparing the toxicity and overall survival of three versus six intracavitary injections of its anti-cancer compound ¹³¹I-TM601 in the treatment of recurrent malignant glioma. The findings showed that intracavitary injections of ¹³¹I-TM601 were well tolerated and improved overall survival in a dose dependent manner. These findings will be presented at the 2009 Joint Meeting of the Society of NeuroOncology (SNO) and American Association of Neurological Surgeons/Congress of Neurological Surgeons (AANS/CNS) Section on Tumors in New Orleans, October 22-24.

"TM601 continually succeeds in oncology applications where traditional means of cytotoxic drug delivery have been less beneficial for patients," said Robert Radie, President and CEO of TransMolecular. "This study provides very specific evidence about the benefits of local therapy with ¹³¹I-TM601 radiopharmaceutical used in cases where prior therapies have failed. Additionally, the study complements clinical data presented at this year's ASCO meeting which demonstrated the potent tumor-targeting potential of intravenously delivered ¹³¹I-TM601 across multiple tumor types, and confirmed its ability to cross the blood-brain barrier," continued Radie.

The primary purpose of this trial, which was conducted at 20 clinical sites in the United States, was to compare the toxicity and overall survival of three versus six weekly intracavitary injections of ¹³¹I-TM601 in the treatment of patients with recurrent high-grade glioma who had failed prior therapy. After a dose escalation phase which included 15 patients, 61 patients were randomized to receive either three or six intracavitary injections via a reservoir placed in the tumor cavity at the time of surgery.

Intracavitary injections of ¹³¹I-TM601 were well tolerated and safely administered up to the maximum planned dose (40 mCi/0.8 mg x 6 weeks). In an analysis that included all 69 patients that received at least one dose of 40 mCi/0.8 mg ¹³¹I-TM601, there was a trend to improved survival with six versus three doses with median overall survival of 11.9 months versus 9.1 months. Historically, this patient population would be expected to have a median survival of approximately 6 months from the time of recurrence.

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“This study demonstrates that ¹³¹I-TM601 improves survival and that giving up to six weekly doses is very safe,” said Dr. John Fiveash, Associate Professor of Radiation Oncology at the University of Alabama at Birmingham and a lead investigator for the study. “We hope to expand this research in the future to examine the role of the peptide in patients with newly diagnosed glioma.”

About TM601

TM601 is a novel, wholly synthetic peptide found to have exceptional tumor-targeting properties as well as robust anti-angiogenic activity in neovascular diseases, including cancer.

TM601 is highly specific and selective in targeting both primary tumors and metastases in the periphery and in the central nervous system. The peptide has the unique properties of highly specific tumor cell binding, uptake and internalization. Preclinical studies confirm that TM601 targets and binds to Annexin A2, a receptor expressed on a wide range of tumor cells but not on normal, healthy cells. The peptide alone has *in vivo* anti-angiogenic activity, but can also be labeled for imaging and therapy.

TransMolecular is expanding the TM601 tumor-targeting platform to deliver a range of therapeutic agents to tumor cells, including novel and currently used chemotherapeutic agents as well as RNAi molecules.

About TransMolecular, Inc.

TransMolecular, Inc. is committed to discovering and developing novel therapeutic products that help patients combat cancer and neovascular diseases. TransMolecular’s product pipeline is based on the TM601 platform, a novel synthetically derived polypeptide, which has both highly specific tumor binding properties and anti-angiogenic therapeutic properties. More information can be found at www.transmolecular.com.

This press release contains forward-looking statements. The Company wishes to caution the reader of this press release that actual results may differ from those discussed in the forward-looking statements and may be adversely affected by, among other things, risks associated with litigation, clinical trials, the regulatory approval process, reimbursement policies, commercialization of new technologies, intellectual property, and other factors.

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