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Foundation Medicine's Comprehensive Genomic Profile Informs Therapeutic Choices and Leads to Promising Outcomes in Pediatric Patients With Gliomas

New Clinical Data Presented at the 3rd Biennial Pediatric Neuro-Oncology Basic and Translational Research Conference

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Foundation Medicine, Inc. (NASDAQ:FMI) today announced new data demonstrating that its comprehensive genomic profiling assay, FoundationOne®, identified a high frequency of clinically relevant genomic alterations in pediatric gliomas that informed treatment decisions and, in some cases, resulted in promising outcomes in a notoriously challenging disease. These findings were presented in a poster titled "Comprehensive genomic profiling (CGP) of pediatric gliomas reveals a high frequency of clinically relevant genomic alterations (CRGA) to inform treatment decisions" by Zachary Chalmers, research associate at Foundation Medicine, at the 3rd Biennial Pediatric Neuro-Oncology Basic and Translational Research Conference in San Diego.

Pediatric glioma is a group of brain tumors that start in the glial cells of children. According to the American Cancer Society, brain and spinal cord tumors are the second most common cancers in children after leukemia. They account for about one out of five childhood cancers, and more than 4,000 central nervous system tumors are diagnosed each year in children and teens.[1] The study presented today included patients with glioblastomas, astrocytomas not otherwise specified (NOS), gliomas NOS, pilocytic astrocytomas and anaplastic astrocytomas.

"The toxicity and side effects associated with the standard of care represent significant challenges in treating brain cancers in children," said John Crawford, M.D., associate professor of clinical neurosciences at the University of California San Diego School of Medicine and director of neuro-oncology at Rady Children's Hospital. "This study provides evidence of the utility of comprehensive genomic profiling in guiding treatment decisions in an attempt to avoid unnecessary and often toxic therapies. These data demonstrate a clear need to expand the use of comprehensive genomic profiling beyond adult cancer care and into the pediatric community to guide therapeutic decisions."

Tumor samples from 75 pediatric patients underwent comprehensive genomic profiling in the course of clinical care using the FoundationOne assay, revealing that 89% of cases harbored at least one clinically relevant genomic alteration. Pediatric gliomas frequently harbored clinically relevant genomic alterations in *BRAF* (29%), *CDKN2A/B* (15%), *NF1* (14%), *PIK3CA* (14%) and *EGFR* (11%). Ten cases (14%) harbored a *BRAF* fusion, including 44% (4 of 9) of the pilocytic astrocytoma cases. Treatment for these patients commonly includes radiation therapy (XRT) or chemotherapy, with the choice of modality depending on the assessment of tumor prognosis. Previous studies show that presence of *BRAF* fusions correlates with disease carrying a better prognosis, as well as being exquisitely sensitive to chemotherapy. Based on the identification of these *BRAF* fusions, four patients were treated with chemotherapy resulting in partial to complete responses for these patients, while avoiding possible sequelae from treatment with XRT. These findings validate comprehensive genomic profiling as a key component of clinical care capable of detecting all classes of gene alterations across pediatric gliomas and providing key diagnostic insights to inform treatment decisions. A large majority of pediatric gliomas harbor at least one clinically relevant cancer gene alteration, and the detection of these can lead to better treatment decisions and outcomes.

"There are few things as devastating to childhood as brain cancer," said Vincent Miller, M.D., chief medical officer, Foundation Medicine. "In addition to the symptoms of the disease, the treatment options can be incredibly harsh on a child's developing body, making it that much more important to select therapies with the best therapeutic index. As this study demonstrates, comprehensive genomic profiling can serve a key role in the oncologic care of these children, providing the potential to identify opportunities for the optimal matching of treatment to disease severity.

Dr. Miller continued, "Given the enormous challenges in treating children diagnosed with brain tumors, we believe these data also represent important information for insurance companies to consider as they evaluate the need to cover comprehensive genomic profiling as part of this population's routine care."

About Foundation Medicine

Foundation Medicine (NASDAQ:FMI) is a molecular information company dedicated to a transformation in cancer care in which treatment is informed by a deep understanding of the genomic changes that contribute to each patient's unique cancer. The company's clinical assays, FoundationOne® for solid tumors and FoundationOne® Heme for hematologic malignancies and sarcomas, provide a comprehensive genomic profile to identify the molecular alterations in a patient's cancer and match them with relevant targeted therapies and clinical trials. Foundation Medicine's molecular information platform aims to improve day-to-day care for patients by serving the needs of clinicians, academic researchers and drug developers to help advance the

science of molecular medicine in cancer. For more information, please visit http://www.FoundationMedicine.com or follow Foundation Medicine on Twitter (@FoundationATCG).

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Cautionary Note Regarding Forward-Looking Statements

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including, but not limited to, statements regarding the ability of FoundationOne to identify clinically relevant genomic alterations, the benefits to patients of comprehensive genomic profiling of their tumors, the utility of FoundationOne in informing treatment of certain patient populations, the ability of FoundationOne to affect the prognosis, treatment or diagnosis of cancer patients, and clinical data related to FoundationOne. All such forward-looking statements are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include the risks that Foundation Medicine's products will not be able to identify genomic alterations in the same manner as prior clinical data; and the risks described under the caption "Risk Factors" in Foundation Medicine's Annual Report on Form 10-K for the year ended December 31, 2014, which is on file with the Securities and Exchange Commission, as well as other risks detailed in Foundation Medicine's subsequent filings with the Securities and Exchange Commission. All information in this press release is as of the date of the release, and Foundation Medicine undertakes no duty to update this information unless required by law.

[1] American Cancer Society

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