May 18, 2017

GlycoMimetics Announces High Overall Response Rates, Low Induction Mortality, Promising Initial Survival Outcomes, and Supportive Biomarker Data from Phase 1/2 Trial of GMI-1271 in AML

- *Company to provide update and host conference call today on clinical data to be presented at 2017 ASCO and EHA Meetings*

ROCKVILLE, Md.--(BUSINESS WIRE)-- GlycoMimetics, Inc. (NASDAQ: GLYC) today announced the release of abstracts containing new data from the ongoing Phase 2 clinical trial of its product candidate GMI-1271, an E-selectin antagonist, in patients with acute myeloid leukemia (AML). The data will be presented at the June annual meetings of the American Society of Clinical Oncology (ASCO) and the European Hematology Association (EHA). The data released by ASCO and EHA, which reflect a late-January analysis, will be updated in posters presented at both meetings.

In the ongoing Phase 2 trial, AML patients treated with GMI-1271, combined with chemotherapy, continue to experience higher-than-expected remission rates and lower-than-expected induction-related mortality rates in both arms of the trial. In addition, researchers have observed that baseline expression of the E-selectin ligand biomarker on leukemia cells was predictive of clinical response and tied to greater likelihood of achieving remission in the cohort of AML patients with relapsed/refractory disease, which supports the mechanism of action of GMI-1271. Treatment with GMI-1271 continues to be well tolerated, with no obvious incremental toxicity observed when GMI-1271 is added to chemotherapy.

According to Helen Thackray, MD, Chief Medical Officer, "The data has consistently shown good tolerability and high remission rates as well as lower than expected 30- and 60-day mortality rates in early evaluations of patients. We are increasingly confident that our investigational drug, GMI-1271, may play a role in addressing unmet needs in this cancer. It is particularly noteworthy to see in the relapsed/refractory cohort that patients who have higher levels of the E-selectin ligand biomarker on their leukemic blasts appear to be more likely to achieve remission of their disease. This observation builds directly on what we and others have reported in the preclinical and clinical settings about the key role E-selectin plays in many forms of cancer, including AML. Importantly, this provides what we believe is the first direct clinical evidence of the potential benefit of targeting of E-selectin in this difficult-to-treat population of AML patients."

Relapsed or Refractory Disease Arm: Abstract Data

Consistent with GlycoMimetics' prior published research, the addition of GMI-1271 to mitoxantrone, etoposide and cytarabine (MEC) chemotherapy has been well-tolerated, with patients achieving a high overall response rate (ORR), low induction mortality, and promising initial survival outcomes. The data show that baseline expression of the E-selectin ligand biomarker was predictive of response. GlycoMimetics believes these results are better than what would be expected in this population, based on published historical controls in similar patients.

Highlights of the data reported in the published abstract include:

- 47 patients were enrolled.
- 30- and 60-day mortality were 0 and 7%, respectively.
- ORR was 21/42 evaluable (50%).
- Median Overall Survival in the Phase 1 portion was 7.6 months.
- The median E-selectin ligand binding at baseline was 35% of blasts (range, 1-75%) and, importantly, was higher in those achieving remission.

The data from the ongoing Phase 2 trial were submitted to the U.S. Food and Drug Administration (FDA). As announced yesterday, GMI-1271 was granted Breakthrough Therapy designation from the FDA for the treatment of adult AML patients with relapsed/refractory disease. The FDA had previously granted Orphan Drug designation and Fast Track Status for GMI-1271 for the treatment of AML.

Newly Diagnosed, Treatment-Naïve, Elderly Arm: Abstract Data

In the published abstract, data reflects 17 of 24 enrolled and evaluable elderly patients. Highlights from the abstract include:

- The remission rate (CR/CRi) was 12/17 (71%).
- CR/CRi rate was 75% for patients with *de novo* disease and 67% for patients with secondary AML.

GlycoMimetics noted that the safety profile of the investigational drug, GMI-1271, in combination with chemotherapy is encouraging. Outcomes for elderly patients with AML remain poor, and tolerability of treatments is a key concern.

Conference Call Today

Company management will host a conference call today, Thursday, May 18, 2017 at 8:30 a.m. Eastern time to provide a clinical data update from the abstracts for the upcoming ASCO conference. A question and answer session with the GlycoMimetics team will follow the company's remarks. The call can be accessed by dialing (844) 413-7154 (U.S. and Canada) or (216) 562-0466 (international) and entering passcode 4110139. To access the live audio webcast, or the subsequent archived recording, visit the "Investors - Events & Presentations" section of the GlycoMimetics website at www.glycomimetics.com. The webcast will be recorded and available for replay on the GlycoMimetics website for 30 days following the call.

About the Phase 1/2 Trial

The trial is comprised of two arms, one treating newly diagnosed AML patients 60 years of age and older and the other, treating adult patients with relapsed or refractory disease. The enrollment of the cohort of newly diagnosed patients is complete; enrollment of the cohort with relapsed/refractory disease is expected to complete by mid-year. GlycoMimetics intends to enroll a total of approximately 90 patients in the trial, of which approximately 25 have newly diagnosed disease and approximately 65 have relapsed or refractory disease. Initial results of this study were first reported at the EHA 2016 meeting in Copenhagen, and GlycoMimetics provided an update at the December 2016 American Society of Hematology (ASH) meeting.

Details of the ASCO Presentations

Abstract #2520

Poster with discussion. DeAngelo, D.J., et al. "GMI-1271, a Novel E-Selectin Antagonist, in Combination with Chemotherapy in Relapsed/Refractory AML." Poster Session: Developmental Therapeutics—Clinical Pharmacology and Experimental Therapeutics. Monday, June 5, 8:00-11:30 a.m. CT. Poster Discussion Session: Developmental Therapeutics—Clinical Pharmacology and Experimental Therapeutics, Monday, June 5, 11:30 a.m.-12:45 p.m. CT.

Presenter: Daniel J. DeAngelo, MD, PhD, Dana-Farber Cancer Institute Director of Clinical and Translational Research, Adult Leukemia; Harvard Medical School Associate Professor of Medicine

Abstract #2560

Poster. DeAngelo, D.J. et al. "GMI-1271, a Novel E-Selectin Antagonist, Combined with Induction Chemotherapy in Elderly Patients with Untreated AML." Session Title: Poster Session: Developmental Therapeutics—Clinical Pharmacology and Experimental Therapeutics. Monday, June 5, 8:00-11:30 a.m. CT.

Presenter: Dr. DeAngelo

The ASCO Annual Meeting 2017 takes place from June 2 to 5, at McCormick Place in Chicago. Meeting abstracts are available at ASCO's website.

Details of the EHA presentations

Abstract Code: P547

Poster. DeAngelo, D.J., et al. "GMI-1271, A Potent E-Selectin Antagonist, In Combination With Chemotherapy In Relapsed/Refractory AML: A Novel, Well-Tolerated Regimen With A High Remission Rate." Session Title: Acute myeloid leukemia - Clinical 4. Saturday, June 24, 17:30 - 19:00. Poster area (Hall 7).

Presenter: Dr. DeAngelo

Abstract Code: P203

Poster. DeAngelo, D.J., et al. "GMI-1271, A Potent E-Selectin Antagonist, Combined With Induction Chemotherapy In Elderly Patients with Untreated AML: A Novel, Well-Tolerated Regimen With A High Remission Rate." Session Title: Acute myeloid leukemia - Clinical 2. Friday, June 23, 17:15 - 18:45. Poster area (Hall 7).

Presenter: Dr. DeAngelo

The 22nd Congress of EHA (European Hematology Association) takes place from June 22 to 25, 2017 in Madrid, Spain. Meeting abstracts will be available at EHA's website.

About GlycoMimetics, Inc.

GlycoMimetics is a clinical-stage biotechnology company focused on cancer and sickle cell disease. GlycoMimetics' most advanced drug candidate, rivipansel, a pan-selectin antagonist, is being developed for the treatment of vaso-occlusive crisis in sickle cell disease and is being evaluated in a Phase 3 clinical trial being conducted by its strategic collaborator, Pfizer. GlycoMimetics' wholly-owned drug candidate, GMI-1271, an E-selectin antagonist, is being evaluated in an ongoing Phase 1/2 clinical trial as a potential treatment for AML and in a Phase 1 clinical trial in multiple myeloma. GlycoMimetics has also recently initiated a clinical trial with a third drug candidate, GMI-1359, a combined CXCR4 and E-selectin antagonist. GlycoMimetics is located in Rockville, MD in the BioHealth Capital Region. Learn more at www.glycomimetics.com.

Forward-Looking Statements

This press release contains forward-looking statements regarding GlycoMimetics' planned activities with respect to the clinical development of its drug candidate GMI-1271. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including the availability and timing of data from ongoing clinical trials, the uncertainties inherent in the initiation of future clinical trials, whether interim results from a clinical trial will be predictive of the final results of the trial or results of early clinical trials will be indicative of the results of future trials, expectations for regulatory approvals, availability of funding sufficient for GlycoMimetics' foreseeable and unforeseeable operating expenses and capital expenditure requirements, other matters that could affect the availability or commercial potential of GlycoMimetics' drug candidates and other factors discussed in the "Risk Factors" section of GlycoMimetics' Annual Report on Form 10-K that was filed with the U.S. Securities and Exchange Commission on March 1, 2017, and other filings GlycoMimetics makes with the Securities and Exchange Commission from time to time. In addition, the forward-looking statements included in this press release represent GlycoMimetics' views as of the date hereof. GlycoMimetics anticipates that subsequent events and developments may cause its views to change. However, while GlycoMimetics may elect to update these forward-looking statements at some point in the future, GlycoMimetics specifically disclaims any obligation to do so, except as may be required by law. These forward-looking statements should not be relied upon as representing GlycoMimetics' views as of any date subsequent to the date hereof.

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