Jazz Pharmaceuticals Announces First Patient Enrolled in Pivotal Phase 2/3 Study Evaluating JZP-458 for the Treatment of Acute Lymphoblastic Leukemia or Lymphoblastic Lymphoma

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Pivotal Phase 2/3 study is being conducted in collaboration with Children's Oncology Group

DUBLIN, Dec. 30, 2019 /PRNewswire/ -- Jazz Pharmaceuticals plc (Nasdaq: JAZZ) today announced that the first patient has been enrolled in the pivotal Phase 2/3 clinical study for JZP-458, a recombinant *Erwinia* asparaginase molecule that uses a novel *Pseudomonas fluorescens* expression platform. The study, conducted in collaboration with the Children's Oncology Group (COG), is evaluating JZP-458 as a potential treatment for pediatric and adult patients with acute lymphoblastic leukemia (ALL) or lymphoblastic lymphoma (LBL) who are hypersensitive to *E. coli*-derived asparaginases. Hypersensitivity reactions affect up to 30 percent of patients with ALL and LBL who are treated with *E. coli*-derived asparaginase.[1]

"We're pleased to collaborate with Jazz on this important study," said Dr. Mignon Loh, professor of pediatrics at the University of California San Francisco (UCSF), Deborah and Arthur Ablin Endowed Chair in Pediatric Molecular Oncology and COG's Acute Lymphoblastic Leukemia Disease Committee Chair.

"This clinical trial represents a tremendously important effort as it is investigating a novel asparaginase, JZP-458, which can be critically important for the treatment of some children with ALL, the most common type of childhood malignancy," stated Dr. Luke Maese, assistant professor at the University of Utah, Primary Children's Hospital and Huntsman Cancer Institute.

The single-arm, open-label, multicenter, dose confirmation and confirmatory study of JZP-458 will evaluate pediatric and adult patients with ALL or LBL who have silent inactivation or an allergic reaction to *E. coli*-derived asparaginases and have not previously received asparaginase *Erwinia chrysanthemi*. This study is designed to assess the safety, tolerability and efficacy of JZP-458 and is expected to enroll patients in approximately 60 COG institutions in the U.S. and Canada. The primary objective of the study is to determine the efficacy of JZP-458 measured by asparaginase activity.

"When undergoing treatment for ALL with asparaginase, it is critically important for patients to receive all of the necessary doses to maintain therapeutic levels throughout their regimen, something not always possible for patients who have an allergy to *E. coli*-derived asparaginase," said Robert Iannone, M.D., M.S.C.E., executive vice president, research and development of Jazz Pharmaceuticals. "Our ongoing collaboration with COG for this JZP-458 study, and the receipt of Fast Track designation from the U.S. Food and Drug Administration in October, are significant because they could potentially allow us to more quickly address this need with a new asparaginase option. Jazz is committed to addressing unmet needs for patients with hematologic cancers and the continued expansion of our asparaginase franchise is an important component of our development programs."

Additional information about the trial, including eligibility criteria and a list of clinical trial sites, can be found at: https://clinicaltrials.gov (ClinicalTrials.gov Identifier: NCT04145531).

About JZP-458

JZP-458 is a recombinant *Erwinia* asparaginase that uses a novel *Pseudomonas fluorescens* expression platform. It is being developed for use as a component of a multi-agent chemotherapeutic regimen in the treatment of pediatric and adult patients with acute lymphoblastic leukemia (ALL) or lymphoblastic lymphoma (LBL) who are hypersensitive to *E. coli*-derived asparaginase products. JZP-458 was granted Fast Track designation by the U.S. Food and Drug Administration in October 2019 for the treatment of this patient population.

About Acute Lymphoblastic Leukemia

Acute lymphoblastic leukemia (ALL) is a cancer of the blood and bone marrow that can progress quickly if not treated.[2] Leukemia is the most common cancer in children, and about three out of four of these cases are ALL.[3] Although it is one of the most common cancers in children, ALL is among the most curable of the pediatric malignancies due to recent advancements in treatment.[4,5] Adults can also develop ALL, and about four of every 10 cases of ALL diagnosed are in adults.[6] The American Cancer Society estimates that almost 6,000 new cases of ALL will be diagnosed in the United States in 2019.[6] Asparaginase is a core component of multi-agent chemotherapeutic regimens in ALL.[7] However, asparaginase treatments derived from *E. coli* are associated with the potential for development of hypersensitivity reactions.[8]

About the Children's Oncology Group

The Children's Oncology Group (www.childrensoncologygroup.org) is the world's largest organization devoted exclusively to childhood and adolescent cancer research. The Children's Oncology Group (COG) unites almost 10,000 experts in childhood cancer at more than 200 leading children's hospitals, universities, and cancer centers across United States, Canada, Australia, New Zealand, and parts of world in the fight against childhood cancer. Today, more than 90% of the 14,000 children and adolescents diagnosed with cancer each year in the United States are cared for at COG member institutions. Research performed by the COG institutions over the past fifty years has transformed childhood cancer from a virtually incurable disease to one with a combined 5-year survival rate of 80%. COG's mission is to improve the cure rate and outcome for all children with cancer.

About Jazz Pharmaceuticals plc

Jazz Pharmaceuticals plc (Nasdaq: JAZZ), a global biopharmaceutical company, is dedicated to developing life-changing medicines for people with limited or no options. As a leader in sleep medicine and with a growing hematology/oncology portfolio, Jazz has a diverse portfolio of products and product candidates in development, and is focused on transforming biopharmaceutical discoveries into novel medicines. Jazz Pharmaceuticals markets Sunosi® (solriamfetol), Xyrem® (sodium oxybate) oral solution, Defitelio® (defibrotide sodium), Erwinaze® (asparaginase *Erwinia chrysanthemi*) and Vyxeos® (daunorubicin and cytarabine) liposome for injection in the U.S. and markets Defitelio® (defibrotide), Erwinase® and Vyxeos® liposomal 44 mg/100 mg powder for concentrate for solution for infusion in countries outside the U.S. For country-specific product

information, please visit www.jazzpharmaceuticals.com/medicines. For more information, please visit www.jazzpharmaceuticals.com and follow us on Twitter at @JazzPharma.

"Safe Harbor" Statement under the Private Securities Litigation Reform Act of 1995
This press release contains forward-looking statements, including, but not limited to, statements related to the significance of Jazz Pharmaceuticals' collaboration with Children's Oncology Group and JZP-458's Fast Track designation in potentially allowing Jazz Pharmaceuticals to more quickly address an unmet need with a new asparaginase option and other statements that are not historical facts. These forward-looking statements are based on Jazz Pharmaceuticals' current plans, objectives, estimates, expectations and intentions and inherently involve significant risks and uncertainties. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks and uncertainties, which include, without limitation, risks and uncertainties associated with: pharmaceutical product development and clinical success thereof; the regulatory approval process and the timing thereof; effectively commercializing any product candidates; and other risks and uncertainties affecting Jazz Pharmaceuticals and its development programs, including those described from time to time under the caption "Risk Factors" and elsewhere in Jazz Pharmaceuticals plc's Securities and Exchange Commission filings and reports (Commission File No. 001-33500), including Jazz Pharmaceuticals' Quarterly Report on Form 10-Q for the quarter ended September 30, 2019 and future filings and reports by Jazz Pharmaceuticals. Other risks and uncertainties of which Jazz Pharmaceuticals is not currently aware may also affect Jazz Pharmaceuticals' forward-looking statements and may cause actual results and the timing of events to differ materially from those anticipated. The forward-looking statements herein are made only as of the date hereof or as of the dates indicated in the forward-looking statements, even if they are subsequently made available by Jazz Pharmaceuticals on its website or otherwise. Jazz Pharmaceuticals undertakes no obligation to update or supplement any forward-looking statements to reflect actual results, new information, future events, changes in its expectations or other circumstances that exist after the date as of which the forward-looking statements were made.

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