Jazz Pharmaceuticals Announces FDA Approval of Vyxeos™ (daunorubicin and cytarabine) Liposome for Injection for the Treatment of Adults with Newly-Diagnosed Therapy-Related Acute Myeloid Leukemia (t-AML) or AML with Myelodysplasia-Related Changes (AML-MRC)

August 3, 2017

Vyxeos represents the first new chemotherapy advance in more than 40 years for these adults with AML

Vyxeos improved overall survival compared to standard of care 7+3 (cytarabine and daunorubicin) regimen (9.6 months vs. 5.9 months, respectively)

DUBLIN, Aug. 3, 2017 /PRNewswire/ -- Jazz Pharmaceuticals plc (Nasdaq: JAZZ) today announced that the U.S. Food and Drug Administration (FDA) has approved Vyxeos™ (daunorubicin and cytarabine) liposome for injection for the treatment of adults with two types of Acute Myeloid Leukemia (AML), a rapidly progressing and life-threatening blood cancer. Vyxeos is indicated for the treatment of adults with newly-diagnosed t-AML or AML-MRC.

"Vyxeos is the first new chemotherapy advance in more than 40 years for adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes," said Bruce Cozadd, chairman and chief executive officer of Jazz Pharmaceuticals. "The FDA approval of Vyxeos reflects our commitment to addressing unmet needs within the hematology oncology community."

Designed with Jazz's CombiPlex® proprietary technology, Vyxeos is a unique liposomal formulation that delivers a fixed-ratio of daunorubicin and cytarabine to the bone marrow that has been shown to have synergistic effects at killing leukemia cells in vitro and in animal models. Vyxeos is the first product developed with the company's proprietary CombiPlex platform, which enables the design and rapid evaluation of various combinations of therapies.

"Vyxeos is the first chemotherapy to demonstrate an overall survival advantage over the standard of care in a Phase 3 randomized study of older adults with newly-diagnosed therapy-related AML or AML with myelodysplasia-related changes," said Jeffrey E. Lancet, MD, Chair of the Department of Malignant Hematology at Moffitt Cancer Center. "The prognosis for these patients is poor, so the FDA approval of this new drug provides a welcome therapeutic advance."

Vyxeos will be commercially available within a week. For more information about Vyxeos in the United States, please visit http://www.Vyxeos.com.

Vyxeos has different dosage recommendations from other medications that contain daunorubicin and/or cytarabine. Do not substitute Vyxeos for other daunorubicin- and/or cytarabine- containing products.

The FDA approval is based on data from a pivotal Phase 3 clinical trial that evaluated the efficacy and safety of Vyxeos compared to cytarabine and daunorubicin (7+3) in 309 patients 60 to 75 years of age with newly diagnosed t-AML or AML-MRC. In the Vyxeos arm, patients received 44mg/100mg per m2 (daunorubicin and cytarabine) liposome intravenously via a 90 minute infusion on days 1, 3 and 5 of induction (days 1 and 3 if a second induction was needed) and 29mg/65mg per m2 (daunorubicin and cytarabine) liposome on days 1 and 3 for consolidation. Patients in the 7+3 arm received induction with cytarabine 100mg/m2/day on days 1-7 by continuous infusion and daunorubicin 60mg/m2/day on days 1-3. For consolidation, cytarabine was dosed on days 1-5 and daunorubicin on days 1-2. For the primary endpoint of overall survival, Vyxeos demonstrated an improvement that was superior to the 7+3 treatment regimen. The median overall survival for the Vyxeos treatment group was 9.6 months compared with 5.9 months for the 7+3 treatment group (p = 0.005; HR = 0.69 [0.52, 0.90]). Vyxeos also demonstrated a statistically significant improvement in complete response rate of 38 percent versus 26 percent; p=0.036. The overall, all-cause 30-day mortality was 6 percent in the Vyxeos arm and 11 percent in the control arm. Six percent of patients in both the Vyxeos and control arm had a fatal adverse reaction on treatment or within 30 days of therapy that was not in the setting of progressive disease. During the first 60 days of the study, 14 percent of patients died in the Vyxeos arm versus 21 percent of patients in the 7+3 arm. In addition, the overall rate of hematopoietic stem cell transplant (HSCT) was 34 percent in the Vyxeos arm and 25 percent in the 7+3 arm. In the Phase 3 study, the most common adverse reactions (incidence ≥ 25%) were bleeding events, fever, rash, swelling, nausea, sores in the mouth or throat, diarrhea, constipation, muscle pain, tiredness, stomach pain, difficulty breathing, headache, cough, decreased appetite, irregular heartbeat, pneumonia, blood infection, chills, sleep disorders and vomiting.

About VyxeosTM

Vyxeos™ (daunorubicin and cytarabine) liposome for injection 44mg/100mg is a liposome formulation of a fixed combination of daunorubicin and cytarabine for intravenous infusion.1 Vyxeos is indicated for the treatment of adults with newly-diagnosed t-AML or AML-MRC. The FDA granted the Vyxeos application Priority Review status, designated Vyxeos as a Breakthrough Therapy and also granted Fast Track Designation. Vyxeos received Orphan Drug Designation by the FDA and the European Commission for the treatment of AML.

Important Safety Information

Vyxeos has different dosage recommendations from other medications that contain daunorubicin and/or cytarabine. Do not substitute Vyxeos for other daunorubicin- and/or cytarabine- containing products.

Vyxeos should not be given to patients who have a history of serious allergic reaction to daunorubicin, cytarabine or any of its ingredients.

Vyxeos can cause a severe decrease in blood cells (red and white blood cells and cells that prevent bleeding, called platelets) which can result in serious infection or bleeding and possibly lead to death. Your doctor will monitor your blood counts during treatment with Vyxeos. Patients should tell the doctor about new onset fever or symptoms of infection or if they notice signs of bruising or bleeding.

Vyxeos can cause heart-related side effects. Tell your doctor about any history of heart disease, radiation to the chest, or previous chemotherapy. Inform your doctor if you develop symptoms of heart failure such as:

- shortness of breath or trouble breathing
- swelling or fluid retention, especially in the feet, ankles or legs
- unusual tiredness

Vyxeos may cause allergic reactions including anaphylaxis. Seek immediate medical attention if you develop signs and symptoms of anaphylaxis such as:

- trouble breathing
- severe itching
- skin rash or hives
- swelling of the face, lips, mouth, or tongue

Vyxeos contains copper and may cause copper overload in patients with Wilson's disease or other copper-processing disorders.

Vyxeos can damage the skin if it leaks out of the vein. Tell your doctor right away if you experience symptoms of burning, stinging, or blisters and skin sores at the injection site.

Vyxeos can harm your unborn baby. Inform your doctor if you are pregnant, planning to become pregnant, or nursing. Do not breastfeed while receiving Vyxeos. Females and males of reproductive potential should use effective contraception during treatment and for 6 months following the last dose of Vyxeos.

The most common side effects were bleeding events, fever, rash, swelling, nausea, sores in the mouth or throat, diarrhea, constipation, muscle pain, tiredness, stomach pain, difficulty breathing, headache, cough, decreased appetite, irregular heartbeat, pneumonia, blood infection, chills, sleep disorders, and vomiting.

Please see full Prescribing Information for Vyxeos before prescribing: http://pp.jazzpharma.com/pi/vyxeos.en.USPI.pdf

About AML

Acute myeloid leukemia (AML) is a blood cancer that begins in the bone marrow, which produces most of the body's new blood cells.2 AML cells crowd out healthy cells and move aggressively into the bloodstream to spread cancer to other parts of the body.3 AML is a relatively rare disease representing 1.3 percent of all new cancer cases.4 It is estimated that more than 21,000 people will be diagnosed with AML in the United States this year with the potential for nearly 11,000 people to die from the disease.5 The median age at diagnosis is 68 years old,4 with rising age associated with a progressively worsening prognosis.6 There is also a reduced tolerance for intensive chemotherapy as patients age.7 AML has the lowest survival rate of any other form of leukemia.4 Patients with newly diagnosed t-AML or AML-MRC may have a particularly poor prognosis.8-10 A hematopoietic stem cell transplant (HSCT) may be a curative treatment option for patients.11

About Jazz Pharmaceuticals plc

Jazz Pharmaceuticals plc (Nasdaq: JAZZ) is an international biopharmaceutical company focused on improving patients' lives by identifying, developing and commercializing meaningful products that address unmet medical needs. The company has a diverse portfolio of products and product candidates with a focus in the areas of sleep and hematology/oncology. In these areas, Jazz Pharmaceuticals markets Xyrem® (sodium oxybate) oral solution, Erwinaze®(asparaginase *Erwinia chrysanthemi*), Defitelio® (defibrotide sodium) and Vyxeos™ (daunorubicin and cytarabine) liposome for injection in the U.S. and markets Erwinaze® and Defitelio® (defibrotide) in countries outside the U.S. For more information, please visit www.jazzpharmaceuticals.com.

About CombiPlex®

The CombiPlex proprietary technology enables the design and rapid evaluation of various combinations of therapies to deliver enhanced anti-cancer activity. The CombiPlex technology seeks to identify the most synergistic ratio of drugs in vitro and fix this ratio in a nano-scale delivery complex that maintains the synergistic combination after administration. CombiPlex utilizes two proprietary nano-scale delivery platforms: liposomes to control the release and distribution of water-soluble drugs and drugs that are both water- and fat-soluble (amphipathic), and nanoparticles to control the release and distribution of non-water-soluble (hydrophobic) drugs.

"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 potential benefits and commercial availability of Vyxeos in the U.S., the company's commitment to addressing unmet needs within the hematology oncology community, and other statements that are not historical facts. These forward-looking statements are based on the company's 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: the company's ability to effectively commercialize Vyxeos in the U.S.; delays or problems in the supply or manufacture of Vyxeos; obtaining and maintaining appropriate pricing and reimbursement for Vyxeos; complying with applicable U.S. regulatory requirements; achieving and maintaining commercial success of Vyxeos; pharmaceutical product development and clinical success thereof; the regulatory approval process; and effectively commercializing the company's other products and product candidates; and other risks and uncertainties affecting the company 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 the company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 and future filings and reports by the company. Other risks and uncertainties of which the company is not currently aware may also affect the company's 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 the company on its website or otherwise. The company 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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http://www.jazzpharmaceuticals.com