**Data Presented at WORLDSymposium™ 2018 Show Survival to 3 Years of Age and Improvements in Liver Function in Infants with Lysosomal Acid Lipase Deficiency Treated with Kanuma® (sebelipase alfa)**

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NEW HAVEN, Conn.--(BUSINESS WIRE)--Alexion Pharmaceuticals, Inc. (NASDAQ:ALXN) announced today that the combined interim data from two ongoing open-label studies, VITAL and CL-08, show a 3-year survival estimate of 68% in infants with rapidly progressive lysosomal acid lipase deficiency (LAL-D) treated with Kanuma® (sebelipase alfa). Of the 19 infants who were enrolled in the studies, 7 infants are surviving and have reached 3 years of age while an additional 6 infants have not yet reached 3 years of age. These infants also benefited from improvements in a number of key parameters including weight gain and markers of liver disease and function. There were no discontinuations due to adverse events. These data were presented at the WORLDSymposium™ in San Diego and confirm and extend previously published survival data from these studies.

“Rapidly progressive LAL-D previously meant a death sentence for most infants diagnosed with this devastating and ultra-rare metabolic disease,” said John Orloff, M.D., Executive Vice President and Global Head of R&D at Alexion. “It is gratifying and humbling to see that many of these infants are surviving into childhood when treated with Kanuma®, while experiencing important improvements in their disease symptoms.”

LAL-D is a chronic and progressive ultra-rare metabolic disease, which can lead to multi-organ damage and premature death. For infants with rapidly progressive LAL-D, the median age of death is 3.7 months and mortality by 1 year is nearly 100%. LAL-D is caused by genetic mutations that result in a deficiency in LAL enzyme activity in the lysosomes, that is vital for the breakdown of lipids. This deficiency leads to the chronic build-up of lipids (cholesteryl esters and triglycerides) in the liver, blood vessel walls, the intestinal system and other organs. Kanuma® replaces the lacking or deficient LAL enzyme and is the only approved therapy to address the underlying cause of LAL-D.

**Effect of Kanuma® on Survival to 3 Years of Age and Liver Function in Infants with Rapidly Progressive Lysosomal Acid Lipase Deficiency: Results from 2 Studies**

The current analyses evaluated survival and the clinical profile of infants surviving more than 3 years of age in two ongoing, open-label studies of Kanuma® in infants who presented with signs or symptoms of rapidly progressive LAL-D. Patients in the VITAL study (9 patients), initiated treatment with Kanuma® at a median of 3.0 months of age and received a starting dose of 0.35 mg/kg once-weekly for the first 2 weeks, with dose escalation up to 1, 3 or 5 mg/kg, per protocol. Patients in the CL08 study (10 patients) initiated treatment with Kanuma® at a median of 2.8 months of age and received 1 mg/kg once-weekly with dose escalation up to 3 or 5 mg/kg, per protocol.

In the VITAL study, 6 of 9 patients survived to 12 months of age and in CL08 study, 9 of 10 patients survived to 12 months of age. In both studies, surviving patients had a dose increase to at least 3 mg/kg once-weekly following protocol-defined criteria. As of August 2017, the oldest patient had been receiving treatment with Kanuma® for more than 6 years and is nearly 7 years old (81 months of age).

For the combined studies, a total of 6 patients died and the causes of each death were considered by investigators to be unrelated to treatment with Kanuma®. In the VITAL study, 4 patients died at 2.8, 2.9, 4.3 and 15 months, respectively. In the CL08 study, one patient died at 4.8 months of age and another at 13.8 months of age.

**Combined Clinical Trial Results in Detail:**

- **Survival:** the Kaplan-Meier estimate of survival to 3 years of age was 68% based on the combined data of both studies.
- **Weight gain:** patients’ median weight-for-age percentile, as measured by percentiles in the World Health Organization (WHO) growth chart of the general population, increased from 3.1 at baseline to 25.1 at week 144 in VITAL; and 0.15 at baseline to 61.7 at week 144 in CL08, indicating substantial clinical improvement in growth in both studies.
- **Markers of liver disease and of hematological disease impact:**
  - A reduction in the concentration of two liver injury markers, alanine aminotransferase (ALT) and aspartate aminotransferase (AST), were observed during the course of the treatment period. Patients treated with sebelipase alfa for 144 weeks experienced changes from Baseline in ALT in the VITAL study (median of 145.0 U/L at Baseline [n=9] to 32.0 U/L at Week 144 [n=5]), and in the CL08 study (median of 37.0 U/L at Baseline [n=9] to 22.5 U/L at Week 144 [n=2]). In VITAL, AST decreased from a median of 125.0 U/L at Baseline (n=9) to 49.5 U/L at Week 144 (n=4). In CL08, AST decreased from a median of 99.5 U/L at Baseline (n=8) to 61.0 U/L at Week 144.
ADVERSE REACTIONS

The most common adverse reactions are:

In Patients with Rapidly Progressive Disease Presenting within the First 6 Months of Life (≥30 percent): diarrhea, vomiting, fever, rhinitis, anemia, cough, nasopharyngitis, and urticaria.

In Pediatric and Adult Patients (≥8 percent): headache, fever, oropharyngeal pain, nasopharyngitis, asthenia, constipation, and nausea.
About Alexion

Alexion Pharmaceuticals, Inc. is a global biopharmaceutical company focused on bringing hope to patients and families affected by rare diseases by delivering innovative, life-changing therapies. Alexion developed and commercializes the first and only approved complement inhibitor to treat patients with paroxysmal nocturnal hemoglobinuria (PNH), atypical hemolytic uremic syndrome (aHUS), and anti-acetylcholine receptor (AChR) antibody-positive generalized myasthenia gravis (gMG). In addition, Alexion has two highly innovative enzyme replacement therapies for patients with life-threatening and ultra-rare metabolic disorders, hypophosphatasia (HPP) and lysosomal acid lipase deficiency (LAL-D). As the leader in complement biology for over 20 years, Alexion focuses its research efforts on novel molecules and targets in the complement cascade, and its development efforts on the core therapeutic areas of hematology, nephrology, neurology, and metabolic disorders. This press release and further information about Alexion can be found at: www.alexion.com.

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References

7. Kanuma® (sebelipase alfa) Full Prescribing Information.

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