Eloxx Pharmaceuticals Provides Update on Progress of Its Phase 2 Clinical Programs for ELX-02 and ERSG Pipeline at Biotech Showcase™

January 14, 2020

Phase 2 cystic fibrosis program for ELX-02 expected to be fully enrolled in the first quarter of 2020 and topline results expected during the first half of 2020

Positive Phase 2 topline data reported for ELX-02 in nephropathic cystinosis from the first treatment cohort

ERSG pipeline continues to progress with positive new preclinical data in inherited retinal disorders and autosomal dominant polycystic kidney disease (ADPKD)

WALTHAM, Mass., Jan. 14, 2020 (GLOBE NEWSWIRE) -- Eloxx Pharmaceuticals, Inc. (NASDAQ: ELOX), a clinical-stage biopharmaceutical company dedicated to the discovery and development of novel therapeutics to treat cystic fibrosis, cystinosis, inherited retinal disorders and other diseases caused by nonsense mutations limiting production of functional proteins, today provided an update on progress in its Phase 2 clinical programs and its pipeline of novel ERSG (eukaryotic ribosomal selective glycoside) compounds.

The Phase 2 Cystic Fibrosis clinical trial program for ELX-02 is actively dosing patients in the U.S. and Israel and continuing to enroll patients at leading global investigator sites. We expect full enrollment to be achieved during the first quarter of 2020 and to report topline results during the first half of 2020. In the U.S., the Cystic Fibrosis Foundation is providing funding for a portion of the trial.

We continue to progress our ERSG pipeline in inherited retinal disorders (IRD) and ADPKD. In ocular, we recently reported on a critical milestone demonstrating that several of our library compounds successfully reach retinal disorder-relevant tissue layers and can restore protein production in an animal model. We plan to present these data at the Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting May 3-7, 2020 in Baltimore, MD. There are over 300 IRD associated with nonsense mutations.

ADPKD is a relatively common inherited genetic kidney disease occurring in between 1:400 and 1:1000 patients and the 4th leading cause of end stage renal disease in the United States. Over 25% of the primary genetic changes that cause ADPKD are nonsense mutations, where a premature stop codon in the gene leads to a truncated, often unstable, protein. We have evaluated the three most relevant ADPKD nonsense mutations in an in vitro read-through assay and have demonstrated significant levels of read-through for ELX-02 and several library compounds which is the first step in our preclinical development toward IND.

In Cystinosis, Eloxx announced positive data from the first cohort of the Phase 2 study of ELX-02, a novel ERSG, in the treatment of patients with nonsense mutation-mediated nephropathic cystinosis. The first cohort enrolled three homozygous W138X male and female patients ages 23 to 38, with prior kidney transplants and varying degrees of renal insufficiency. The primary endpoint for this study was safety. This study also evaluated other parameters including white blood cell (WBC) cystine levels. Following completion of the first cohort, an independent Safety Review Committee met to review the pharmacokinetic and safety results and approved progressing to the second cohort that would enable enrolling patients ages 12 and older.

Following one week of treatment, all three patients in dose group 2 (DG2, nominal dose 1.0 mg/kg/day) had shown a significant decrease ($p < 0.05$) in WBC cystine levels. After a three-week period of no treatment, followed by two weeks of treatment, two of three patients in dose group 3 (DG3, nominal dose 2.0 mg/kg/day) also showed reductions in WBC cystine levels. All three patients in dose group 1 (DG1, nominal dose 0.5 mg/kg/day, 1 week of treatment) had increases in WBC cystine levels. For cystinosis patients, the targeted goal of therapy is to reduce WBC cystine levels to below 1 nmol of ½ cystine/mg protein. Across all dose groups, patients had elevated and uncontrolled pretreatment WBC cystine levels ranging from 2.2 to 9.5 nmol of ½ cystine/mg protein, representing a substantial therapeutic challenge. In prior clinical studies of cysteamine, patients typically had pretreatment WBC cystine levels less than 2 nmol of ½ cystine/mg protein. Reductions in WBC cystine were apparent across the 1.0 and 2.0 mg/kg/day doses in the first cohort but none of these reductions were to levels below 1 nmol of ½ cystine/mg protein. These promising reductions in WBC cystine provide a clear indication of ELX-02 biologic activity at nominal doses > 0.5mg/kg/day.

Patient	**% Change in White Blood Cell Cystine Levels**		
	Dose Group 1 1-week treatment (nominal dose 0.5 mg/kg/day)	**Dose Group 2 1-week treatment (nominal dose 1.0 mg/kg/day)**	**Dose Group 3 2-week treatment (nominal dose 2.0 mg/kg/day)**
1	+ 32.2	-23.7	+16.3
2	+ 126.4	-38.0	-13.7
3	+20.5	-24.6	-20.5

The pharmacokinetics of ELX-02 administered daily were consistent with those expected based on the prior SAD, MAD and renal impairment studies and the emerging safety profile of ELX-02 in patients supports continued development. In this study, ELX-02 was generally well tolerated with no deaths, nephrotoxicity, ototoxicity or serious adverse events potentially related to ELX-02. The only reported adverse events related to ELX-02 were

injection site reactions that were mild in severity. Consistent with the absence of meaningful changes or negative trends in serum creatinine or eGFR, kidney function was preserved in these post-transplant patients. In other clinical trials, changes in serum creatinine and eGFR have been used as important study endpoints.

Patient	Lab Test	Screening	DG1 Pre-dose		DG2 Pre-dose		DG3 Pre-dose			4-Week Safety Follow Up
			Day 1	Day 7	Day 1	Day 7	Day 1	Day 7	Day 14	
1	Serum Creatinine µmol/L	132	117	126	128	138†	128	120	116	136
2		180	126	110	122	113	128	115	129	130
3		167	145	124	129	131	146	143	140	150
1	eGFR mL/min/ 1.73m^2	44	51	47	46	42†	46	49	52	43
2		45	69	81	72	79	68	77	67	66
3		49	58	70	67	66	58	59	61	56
† Day 5 value										

Eloxx is reviewing these data with a panel of cystinosis scientific and clinical experts to determine if protocol modifications would be appropriate before initiating cohort 2 of this study.

The clear indications of biologic activity at nominal doses > 0.5mg/kg/day provide human clinical proof of concept for ELX-02 and de-risk other clinical applications of our ERSG library using this dosage range. These encouraging results also provide a basis for expansion to studies of additional kidney diseases caused by nonsense mutations such as ADPKD.

This study was conducted with the support of nondilutive funding from Genome Quebec and Genome Canada.

About Cystinosis

Cystinosis is a rare autosomal recessive lysosomal storage disease characterized by the abnormal accumulation of the amino acid, cystine, in lysosomes which eventually leads to intracellular crystal formation throughout the body. Nephropathic cystinosis presents in infancy and is the most common and severe form. Early detection and prompt treatment are critical in slowing the development and progression of symptoms associated with cystinosis. The kidneys and eyes are the two organs most often affected. Individuals with nephropathic or intermediate cystinosis ultimately require a kidney transplant by age 10. With treatment this may be delayed into the patient's teens or 20s. Other signs and symptoms that may occur in patients include muscle deterioration, blindness, inability to swallow, impaired sweating, decreased hair and skin pigmentation, diabetes, and thyroid and nervous system problems. In 1994, the Food and Drug Administration (FDA) approved cysteamine bitartrate (Cystagon®) for the treatment of individuals with cystinosis. In 2013, the FDA approved Procysbi®, an extended release form of cysteamine. Cysteamine is a cystine-depleting agent that can greatly lower cystine levels within cells, but compliance with these agents is often poor.

About ELX-02

Our lead investigational compound, ELX-02, is a eukaryotic ribosomal selective glycoside (ERSG) designed to increase the read-through activity in patients with nonsense mutations and enable the production of sufficient amounts of full-length functional protein to restore activity. Currently ELX-02 is in Phase 2 clinical trials in cystic fibrosis and nephropathic cystinosis patients with diagnosed nonsense mutations on one or both alleles. These patients have a high unmet medical need, a high burden of disease and few, if any, treatment options. Our Phase 2 clinical trial in cystinosis is enrolling 6 patients with the support of the Genome Canada Genomic Applications Partnership Program. Our Phase 2 program in cystic fibrosis will enroll up to 24 patients in the US, Europe and Israel. The Cystic Fibrosis Foundation is providing funding for a portion of the U.S. trial. The protocol has been sanctioned by the Cystic Fibrosis Therapeutics Development Network ("TDN") and the study will be conducted at TDN member sites. In Europe, our Phase 2 program has been given a score of "high priority" by the European Cystic Fibrosis Society-Clinical Trial Network (ECFS-CTN).

About Eloxx Pharmaceuticals

Eloxx Pharmaceuticals, Inc. is a clinical-stage biopharmaceutical company developing novel RNA-modulating drug candidates (designed to be eukaryotic ribosomal selective glycosides) that are formulated to treat rare and ultra-rare premature stop codon diseases. Premature stop codons are point mutations that disrupt protein synthesis from messenger RNA. As a consequence, patients with premature stop codon diseases have reduced or eliminated protein production from the mutation bearing allele accounting for some of the most severe phenotypes in these genetic diseases. These premature stop codons have been identified in over 1,800 rare and ultra-rare diseases. Read-through therapeutic development is focused on extending mRNA half-life and increasing protein synthesis by enabling the cytoplasmic ribosome to read through premature stop codons to produce full-length proteins. Eloxx's lead investigational product candidate, ELX-02, is a small molecule drug candidate designed to restore production of full-length functional proteins. ELX-02 is in the early stages of clinical development focusing on cystic fibrosis and cystinosis. ELX-02 is an investigational drug that has not been approved by any global regulatory body. Eloxx's preclinical candidate pool consists of a library of novel drug candidates designed to be eukaryotic ribosomal selective glycosides identified based on read-through potential. Eloxx recently announced a new program focused on rare ocular genetic disorders. Eloxx is headquartered in Waltham, MA, with operations in Rehovot, Israel. For more information, please visit www.eloxxpharma.com.

Forward-Looking Statements

This press release contains forward-looking statements, which are generally statements that are not historical facts. Forward-looking statements can be identified by the words "expects," "anticipates," "believes," "intends," "estimates," "plans," "will," "outlook" and similar expressions. Forward-looking statements are based on management's current plans, estimates, assumptions and projections, and speak only as of the date they are made. We undertake no obligation to update any forward-looking statement in light of new information or future events, except as otherwise required by law. Forward-looking statements involve inherent risks and uncertainties, most of which are difficult to predict and are generally beyond our control. Actual

results or outcomes may differ materially from those implied by the forward-looking statements as a result of the impact of a number of factors, including: the development of the Company's read-through technology; the approval of the Company's patent applications; the Company's ability to successfully defend its intellectual property or obtain necessary licenses at a cost acceptable to the Company, if at all; the successful implementation of the Company's research and development programs and collaborations; the Company's ability to obtain applicable regulatory approvals for its current and future product candidates; the acceptance by the market of the Company's products should they receive regulatory approval; the timing and success of the Company's preliminary studies, preclinical research, clinical trials, and related regulatory filings; the ability of the Company to consummate additional financings as needed; as well as those discussed in more detail in our Annual Report on Form 10-K and our other reports filed with the Securities and Exchange Commission.

Contact:

Barbara Ryan
203-274-2825
barbarar@eloxxpharma.com

SOURCE: Eloxx Pharmaceuticals, Inc.

Source: Eloxx Pharmaceuticals