FDA Issues Complete Response Letter Regarding Acetadote® Supplemental New Drug Application for Acute Liver Failure

NASHVILLE, Tenn., Dec. 22, 2010 /PRNewswire/ -- **Cumberland Pharmaceuticals Inc.** (Nasdaq: CPIX) announced today that it has received a Complete Response Letter from the U.S. Food and Drug Administration (FDA) regarding its supplemental new drug application (sNDA) for Acetadote® (*acetylcysteine*) Injection to treat patients with non-acetaminophen induced acute liver failure.

The FDA issues a Complete Response Letter (CRL) when it has completed its review of an application as a formal communication to identify additional work required or items that must be addressed prior to approval of a new product or indication. In its CRL to Cumberland regarding this new indication for Acetadote, the agency confirmed that patients with Coma Grade I/II observed a numerically higher rate of transplant-free survival, but also noted that there was not sufficient evidence of efficacy for the proposed indication of increasing survival in *all* patients with acute liver failure.

"We appreciate the FDA's efforts to review this application, and we share the agency's commitment to providing pharmaceutical products that meet the highest standards of safety and efficacy for patient groups who will truly benefit," said A.J. Kazimi, Chief Executive Officer of Cumberland Pharmaceuticals. "We continue to believe that the data and literature supporting Acetadote as a treatment for patients suffering from non-acetaminophen acute liver failure are extremely relevant to a critically ill patient population with few treatment alternatives. We plan to request a meeting with the FDA to resolve the outstanding issues related to this application and look forward to working closely with the agency to gain clarity on the pathway to approval for this important indication."

The sNDA for the new indication, filed in March 2010, was based in part on data from a clinical trial led by investigators at the University of Texas Southwestern Medical Center indicating that acute liver failure patients treated with Acetadote have an improved chance of survival without a transplant. The study also demonstrated that these patients can survive a significant number of days longer without transplant, providing patients requiring transplant increased time for a donor organ to become available. Patients were stratified according to Coma Grade, with Coma Grade I representing the earliest stages of liver failure and Coma Grade IV representing late-stage conditions. Analyses presented in Cumberland's sNDA indicate that transplant-free survival was significantly higher at three weeks, one year and two years for patients in Coma Grades I and II receiving Acetadote than for those receiving placebo. The results from the study, which is the largest clinical trial studying acute liver failure to date, were published in the medical journal *Gastroenterology*(1).

Cumberland's request to expand labeling for Acetadote to include the new indication followed a discussion of this data with the FDA. The Company requested and was granted a priority review for the application.

This sNDA is part of Cumberland's commitment to support ongoing development of Acetadote and its other products. Acetadote was initially launched by Cumberland in 2004 as the first injectable drug to treat acetaminophen overdose approved in the United States. Since then, Acetadote has become a standard of care in treating acetaminophen poisoning, which is the leading cause of toxic drug ingestions reported to U.S. poison control centers(2). In 2006, the FDA approved Acetadote for use in pediatric patients. Cumberland also received FDA approval for updated safety labeling for Acetadote in 2008 based on information from a post-marketing safety study reporting a lower incidence of side effects compared to previously reported data.

In October 2010, Cumberland submitted an application to the FDA for approval of a new, second generation formulation of Acetadote, which is designed to replace the currently marketed product. The Company is currently supporting FDA review of that application and expects to receive agency response regarding the new formulation by early January 2011.

About Acute Liver Failure

Acute liver failure is a rare syndrome associated with a high mortality rate and frequent need for liver transplantation. Approximately 50% of acute liver failure cases are caused by acetaminophen poisoning. Other causes of acute liver failure not induced by acetaminophen overdose include hepatitis B disease, autoimmune hepatitis, Wilson disease, fatty liver of pregnancy, and HELLP (hemolysis, elevated liver enzymes, low platelets) syndrome. Currently, transplantation of the liver is the only treatment for patients with liver failure not caused by acetaminophen overdose.

About Acetadote

Acetadote, administered intravenously within 8 to 10 hours after ingestion of a potentially hepatotoxic quantity of

acetaminophen, is indicated to prevent or lessen hepatic injury. Used in the emergency department, Acetadote is the only injectable product approved in the United States to treat overdose of acetaminophen, a common ingredient in many over-the-counter painkillers. Acetadote is contraindicated in patients with hypersensitivity or previous anaphylactoid reactions to acetylcysteine or any components of the preparation. Serious anaphylactoid reactions, including death in a patient with asthma, have been reported in patients administered acetylcysteine intravenously. Acetadote should be used with caution in patients with asthma, or where there is a history of bronchospasm. The total volume administered should be adjusted for patients weighing less than 40 kg and for those requiring fluid restriction. To avoid fluid overload, the volume of diluent should be reduced as needed. If volume is not adjusted fluid overload can occur, potentially resulting in hyponatremia, seizure, and death. For full prescribing information, visit www.acetadote.net.

About Cumberland Pharmaceuticals

Cumberland Pharmaceuticals Inc. is a Tennessee-based specialty pharmaceutical company focused on the acquisition, development and commercialization of branded prescription products. The Company's primary target markets include hospital acute care and gastroenterology. Cumberland's product portfolio includes Acetadote® (acetylcysteine) Injection for the treatment of acetaminophen poisoning, Caldolor® (ibuprofen) Injection, the first injectable treatment for pain and fever available in the United States, and Kristalose® (lactulose) for Oral Solution, a prescription laxative. Cumberland is dedicated to providing innovative products which improve quality of care for patients. For more information on Cumberland Pharmaceuticals, please visit the Company's website at www.cumberlandpharma.com.

Forward-Looking Statements

This press release contains forward-looking statements, which are subject to certain risks and reflect Cumberland's current views on future events based on what it believes are reasonable assumptions. No assurance can be given that these events will occur. As with any business, all phases of Cumberland's operations are subject to factors outside its control, and any one or combination of these factors could materially affect Cumberland's results of operations. These factors include market conditions, competition, an inability of manufacturers to produce Cumberland's products on a timely basis or a failure of manufacturers to comply with regulations applicable to pharmaceutical manufacturers, maintaining an effective sales and marketing infrastructure and other factors set forth under the headings "Risk factors" and "Management's discussion and analysis of financial condition and results of operations" in Cumberland's Form 10-K filed with the SEC on March 19, 2010. There can be no assurance that results anticipated by the Company will be realized or that they will have the expected effects. Readers are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date hereof. The Company does not undertake any obligation to publicly revise these statements to reflect events after the date hereof.

References

(1) Lee WM, Hynan LS, Rossaro L, Fontana RJ, Stravitz RT, Larson AM, Davern TJ 2nd, Murray NG, McCashland T, Reisch JS, Robuck PR; Acute Liver Failure Study Group. Intravenous N-acetylcysteine improves transplant-free survival in early stage non-acetaminophen acute liver failure. Gastroenterology. 2009 Sep;137(3):856-64.

(2) National Poison Data System, American Association of Poison Control Centers

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