DARA BioSciences Petitions FDA to Amend Label for Tamoxifen Citrate and Soltamox® to Extend Duration of Adjuvant Therapy to 10 Years

DARA Takes Leadership Role to Update Tamoxifen and Soltamox® Prescribing Information to Mirror ASCO, NCCN Breast Cancer Treatment Guidelines

RALEIGH, NC -- (Marketwired) -- 10/29/14 -- DARA BioSciences, Inc. (NASDAQ: DARA), an oncology supportive care pharmaceutical company dedicated to providing health care professionals with a synergistic portfolio of medicines to help cancer patients adhere to their therapy and manage side effects arising from their cancer treatment, today petitioned the U.S. Food and Drug Administration (FDA) to amend the label for tamoxifen citrate and Soltamox® (tamoxifen citrate), the only FDA-approved liquid bioequivalent of tamoxifen, by increasing the recommended duration of adjuvant therapy for women with estrogen receptor-positive breast cancer from five to 10 years.

Tamoxifen citrate has long been the standard adjuvant endocrine treatment for pre-menopausal women with estrogen receptor-positive breast cancer. Recent data from multinational randomized clinical trials, the ATLAS and aTTom studies, prompted the American Society of Clinical Oncology (ASCO) and the National Comprehensive Cancer Network (NCCN) to update their clinical practice guidelines, extending the duration of adjuvant tamoxifen therapy from five to 10 years. DARA BioSciences introduced the U.S. market to Soltamox® (tamoxifen citrate), the only FDA-approved liquid formulation of tamoxifen, to provide women a therapeutic option for their breast cancer therapy.

"At DARA BioSciences, we believe tamoxifen citrate is a crucial treatment option for breast cancer patients, and we are leading the effort to ask the FDA to ensure the label for tamoxifen citrate and Soltamox® accurately reflects the latest clinical evidence of improved outcomes," said Christopher Clement, President and CEO of DARA. "Having current clinical guidelines included on a newly updated label is an important avenue to educate clinicians, pharmacists and patients, and we believe it will improve the care of patients with breast cancer."

DARA submitted its Citizen's Petition under section 10.30 of the Federal Food, Drug and Cosmetic Act. According to the process, the FDA typically provides an initial response within 6 months of filing.

Tamoxifen is indicated for the treatment of metastatic breast cancer, adjuvant treatment of breast cancer, the reduction of risk of invasive breast cancer in women with ductal...
carcinoma in situ, and to reduce breast cancer incidence in high risk women. More than 1.9 million prescriptions of tamoxifen are written annually in the United States.

Tamoxifen, in existence since the 1960s, was originally created to block estrogen in the hopes of preventing pregnancy. In the 1970s, V. Craig Jordan, PhD, now a professor in Breast Medical Oncology and Molecular and Cellular Oncology at the University of Texas MD Anderson Cancer Center, developed the strategy of long-term adjuvant tamoxifen therapy, as well as describing and deciphering the properties of a new group of medicines called selective estrogen receptor modulators (SERMs).

"Tamoxifen continues to be a cornerstone in the long-term treatment and prevention strategies for women at risk, and the latest evidence points to extending the duration of treatment," said Jordan, who is known as the "Father of Tamoxifen". "Whether a pill or liquid formulation, tamoxifen has proven an effective tool in the fight against breast cancer, and I support DARA’s efforts to work through the FDA’s citizen's petition channel to incorporate this change in label."

In 2013, ‘tamoxifen' was the top searched term on breastcancer.org, a leading resource for breast health and breast cancer information and support. "Research shows that ten years of adjuvant treatment with tamoxifen offers significantly better outcomes than the standard five years in terms of reducing the risk for breast cancer recurrence and breast cancer-specific death," said Brian Wojciechowski, MD, Breastcancer.org medical adviser. "The label is an important conversation-starter to encourage patients to take an active role in their long-term treatment plan."

Between 31 and 60 percent of patients fail to complete their prescribed course of treatment, thereby diminishing its benefits in reducing the risk of breast cancer and breast cancer recurrence, according to several published studies.

"Given the prominent role that tamoxifen in liquid or pill form plays in the treatment of breast cancer, it is critical that physicians educate their patients about the recent research that supports extending the course of treatment to 10 years," said Nancy Peacock, MD, a medical oncologist at Tennessee Oncology at St. Thomas Midtown Hospital in Nashville, Tenn. "One of our jobs as oncologists is to make sure that women who have been diagnosed with breast cancer have the right information to make their healthcare decisions, and I believe updating the label for tamoxifen will encourage more of these important conversations between physicians and patients."

About DARA BioSciences, Inc.
DARA BioSciences, Inc. of Raleigh, North Carolina, is an oncology supportive care pharmaceutical company dedicated to providing healthcare professionals a synergistic portfolio of medicines to help cancer patients adhere to their therapy and manage side effects arising from their cancer treatments.

DARA holds exclusive U.S. marketing rights to both Soltamox® (tamoxifen citrate) oral solution and Gelclair®. DARA licensed the U.S. rights to Soltamox® from UK-based Rosemont Pharmaceuticals, Ltd., and Gelclair® from the Helsinn Group in Switzerland. Under an agreement with Innocutis, DARA also markets Bionect® (hyaluronic acid sodium
Soltamox® (tamoxifen citrate) oral solution, the only liquid form of tamoxifen, is indicated for the treatment of metastatic breast cancer, the adjuvant treatment of node-positive breast cancer in postmenopausal women, the reduction in risk of invasive breast cancer in women with ductal carcinoma in situ (DCIS), and for the reduction of the incidence of breast cancer in women at high risk for breast cancer. Currently, there are more than 1.8 million prescriptions of tamoxifen written on an annual basis in the United States. Between 30 and 70 percent of patients fail to complete their prescribed course of treatment, thereby diminishing its benefits in reducing the risk of breast cancer recurrence.

**Tamoxifen Important Safety Information**

Tamoxifen citrate is contraindicated in women who require concomitant coumadin-type anticoagulant therapy, in women with a history of deep vein thrombosis or pulmonary embolus, and in women with known hypersensitivity to the drug or any of its ingredients.

Serious and life-threatening events associated with tamoxifen in the risk reduction setting (women at high risk for cancer and women with DCIS) include uterine malignancies, stroke and pulmonary embolism.

The most common adverse reactions to tamoxifen treatment are (incidence > 20%) hot flashes, fluid retention, vaginal discharge, vaginal bleeding, vasodilatation, nausea, irregular menses, weight loss, and musculoskeletal events.

Tamoxifen carries the following Boxed Warning:

**WARNING -- For Women with Ductal Carcinoma in Situ (DCIS) and Women at High Risk for Breast Cancer:** Serious and life-threatening events associated with tamoxifen in the risk reduction setting (women at high risk for cancer and women with DCIS) include uterine malignancies, stroke and pulmonary embolism. Incidence rates for these events were estimated from the NSABP P-1 trial (see **CLINICAL PHARMACOLOGY, Clinical Studies, Reduction in Breast Cancer Incidence In High Risk Women**). Uterine malignancies consist of both endometrial adenocarcinoma (incidence rate per 1,000 women-years of 2.20 for tamoxifen vs. 0.71 for placebo) and uterine sarcoma (incidence rate per 1,000 women-years of 0.17 for tamoxifen vs. 0.0 for placebo)*. For stroke, the incidence rate per 1,000 women-years was 1.43 for tamoxifen vs. 1.00 for placebo**. For pulmonary embolism, the incidence rate per 1,000 women-years was 0.75 for tamoxifen versus 0.25 for placebo**. Some of the strokes, pulmonary emboli, and uterine malignancies were fatal. Health care providers should discuss the potential benefits versus the potential risks of these serious events with women at high risk of breast cancer and women with DCIS considering tamoxifen to reduce their risk of developing breast cancer. The benefits of tamoxifen outweigh its risks in women already diagnosed with breast cancer.

*Updated long-term follow-up data (median length of follow-up is 6.9 years) from NSABP P-1 study. See **WARNINGS, Effects on the Uterus-Endometrial Cancer and Uterine Sarcoma** in Prescribing Information. **See Table 3 under **CLINICAL PHARMACOLOGY, Clinical Studies** in Prescribing Information.
The full Prescribing Information for Soltamox is available at [www.soltamox.com/prescribing-information](http://www.soltamox.com/prescribing-information).

Gelclair® is an alcohol-free bio adherent oral rinse gel for rapid and effective relief of pain associated with oral mucositis caused by chemotherapy and radiation treatment. Gelclair should not be used by patients with a known or suspected hypersensitivity to the product or any of its ingredients. Under an agreement with Innocutis, DARA also markets Bionect® (hyaluronic acid sodium salt, 0.2%) a topical treatment for skin irritation and burns associated with radiation therapy, in U.S. oncology/radiology markets. Bionect should not be used by patients with known hypersensitivity to any of its ingredients. For further information on Gelclair and Bionect and the Full Prescribing Information please visit [www.Gelclair.com](http://www.Gelclair.com) and [www.Bionect.com](http://www.Bionect.com).

In early 2014, DARA kicked off its new partnership with Alamo Pharma Services, a subsidiary of Mission Pharmacal, in deploying a dedicated 20-person national sales team in the U.S. oncology market. In addition to promoting DARA's products Soltamox, Gelclair and Bionect, this specialized oncology supportive care sales team also provides clinicians with access to three Mission Pharmacal products: Ferralet® 90 (for anemia), BINOSTO® (alendronate sodium effervescent tablet indicated for the treatment of osteoporosis), and Aquoral® (for chemotherapy/radiation therapy-induced dry mouth).


DARA is focused on expanding its portfolio of oncology supportive care products in the United States, via in-licensing and/or partnering of complementary late-stage and approved products. In addition, the company wishes to identify a strategic partner for the clinical development of KRN5500, currently in Phase 2 for the treatment of chronic, treatment refractory, chemotherapy-induced peripheral neuropathy (CCIPN). The FDA has designated KRN5500 as a Fast Track Drug, and has granted DARA two separate Orphan Drug Designations for the treatment of multiple myeloma and for the treatment of painful, chronic chemotherapy-induced peripheral neuropathy that is refractory to conventional analgesics (CCIPN).

For more information please visit our web site at [www.darabio.com](http://www.darabio.com).

Media Contact:
David Connolly
LaVoieHealthScience
617-374-8800, Ext. 108
dconnolly@lavoiehealthscience.com

Corporate Contact:
Jim Polson
FTI Consulting
312-553-6730
jim.polson@fticonsulting.com
Source: DARA BioSciences, Inc.