VIVLODEX™ Now Available in U.S. Pharmacies for the Management of Osteoarthritis Pain

Third Low-Dose SoluMatrix® NSAID from Iroko Now Available by Prescription

PHILADELPHIA, February 16, 2016 — Iroko Pharmaceuticals, LLC, a global specialty pharmaceutical company dedicated to advancing the science of analgesia, announced today that VIVLODEX™ (meloxicam) capsules, a nonsteroidal anti-inflammatory drug (NSAID), is now available by prescription at pharmacies across the United States. In a 12-week study VIVLODEX delivered impressive efficacy at low 5-mg and 10-mg doses in patients with osteoarthritis (OA) pain. VIVLODEX dose strengths (5 and 10 mg) are 33% lower than currently available oral meloxicam products. VIVLODEX is approved by the U.S. Food and Drug Administration (FDA) for the management of osteoarthritis pain.[1]

"We are pleased to introduce VIVLODEX, our third low dose SoluMatrix® NSAID, and our second product for patients suffering from osteoarthritis pain," said Lou Vollmer, President and Chief Operating Officer of Iroko. "VIVLODEX now offers patients who are currently taking oral meloxicam an effective low-dose alternative that aligns with FDA prescribing recommendations to use the lowest effective dose of NSAIDs. The launch of VIVLODEX further strengthens our commitment to provide effective low-dose NSAID options for patients experiencing pain."

Systematic reviews of observational studies have shown that serious NSAID adverse events, including cardiovascular thrombotic events, myocardial infarction, stroke, gastrointestinal ulcers and gastrointestinal bleeds[2-3] are dose related. These NSAID associated serious cardiovascular and gastrointestinal adverse events have prompted the FDA and professional medical organizations including the American Heart Association, American Gastroenterological Association, and The American College of Rheumatology, to recommend that NSAIDs be used at the lowest effective dose for the shortest possible duration.[4-7]

"VIVLODEX demonstrated significant pain relief at low 5 mg and 10 mg doses, and may present an important new treatment option for the 27 million Americans with osteoarthritis pain," said Dr. Clarence

Young, Chief Medical Officer of Iroko Pharmaceuticals, LLC. “This latest launch provides patients living with osteoarthritis pain an efficacious, yet low dose, NSAID that aligns with recommendations by the FDA and leading professional organizations to use the lowest effective dose."

About VIVLODEX

VIVLODEX is the first low-dose SoluMatrix® meloxicam approved for the management of osteoarthritis pain. VIVLODEX contains meloxicam as submicron particles that are approximately 10 times smaller than their original size. The reduction in particle size provides an increased surface area, leading to faster dissolution and rapid absorption.[8] Low-dose SoluMatrix® NSAIDs were developed by Iroko to align with recommendations from FDA and other professional medical organizations that NSAIDs be used at the lowest effective dose for the shortest possible duration of time consistent with individual patient treatment goals. For more information, visit **www.vivlodex.com**.

VIVLODEX is a nonsteroidal anti-inflammatory drug indicated for the management of osteoarthritis pain in adults.

Important Safety Information about VIVLODEX

Cardiovascular Thrombotic Events

Nonsteroidal anti-inflammatory drugs (NSAIDs) cause an increased risk of serious cardiovascular (CV) thrombotic events, including myocardial infarction and stroke, which can be fatal. This risk may occur early in treatment and may increase with duration of use.

VIVLODEX is contraindicated in the setting of coronary artery bypass graft (CABG) surgery.

Gastrointestinal Bleeding, Ulceration, and Perforation

NSAIDs cause an increased risk of serious gastrointestinal (GI) adverse events including bleeding, ulceration, and perforation of the stomach or intestines, which can be fatal. These events can occur at any time during use and without warning symptoms. Elderly patients and patients with a prior history of peptic ulcer disease and/or GI bleeding are at greater risk for serious GI events.

VIVLODEX is contraindicated in patients with: a known hypersensitivity to meloxicam or its inactive ingredients; a history of asthma, urticaria, or other allergic-type reactions after taking aspirin or other NSAIDs.

VIVLODEX should be used at the lowest effective dosage for the shortest duration consistent with individual patient treatment goals.

Elevation of one or more liver tests may occur during therapy with VIVLODEX. Rare, sometimes fatal, cases of severe hepatic injury have been reported. VIVLODEX should be discontinued immediately if clinical signs and symptoms of liver disease develop.

NSAIDs, including VIVLODEX, can lead to the new onset or worsening of existing hypertension, which may contribute to the increased incidence of CV events. Blood pressure should be monitored during treatment with VIVLODEX. NSAIDs may diminish the antihypertensive activity of loop and thiazide diuretics, ACE inhibitors, angiotensin receptor blockers, or beta-blockers.

NSAID use has been associated with an increase in the risk of MI, hospitalizations due to heart failure, and death. Also, fluid retention and edema have been observed in patients taking NSAIDs. Avoid the use of VIVLODEX in patients with severe heart failure.

Long-term administration of NSAIDs can result in renal papillary necrosis and other renal injury. VIVLODEX should be used with caution in patients at greatest risk of this reaction, including the elderly, those with impaired renal function, heart failure, liver dysfunction, dehydration, hypovolemia, and those taking diuretics and ACE inhibitors. Avoid the use of VIVLODEX in patients with advanced renal disease. Increases in serum potassium levels, including hyperkalemia, have been reported with NSAID use.

Anaphylactic reactions may occur in patients with the aspirin triad or in patients without prior exposure to VIVLODEX and should be discontinued immediately if an anaphylactic reaction occurs.

NSAIDs can cause serious skin adverse events such as exfoliative dermatitis, Stevens - Johnson Syndrome (SJS), and toxic epidermal necrolysis (TEN), which can be fatal. VIVLODEX should be discontinued if rash or other signs of local skin reaction occur.

Starting at 30 weeks of gestation, VIVLODEX and other NSAIDs should be avoided by pregnant women as premature closure of the ductus arteriosus in the fetus may occur.

Concomitant administration of anticoagulants, antiplatelet agents (e.g., aspirin), SSRIs, SNRIs, salicylates, or other NSAIDs with VIVLODEX may increase the risk of bleeding.

The anti-inflammatory and anti-pyretic activity of VIVLODEX may mask the signs of infection.

Since serious GI, hepatic, and renal events have been reported with NSAID use, consider monitoring CBC and chemistry profile in patients on long-term NSAID therapy.

Most common adverse reactions in clinical trials (incidence ≥2%) include: diarrhea, nausea, and abdominal discomfort.

VIVLODEX capsules do not result in an equivalent systemic exposure to other formulations of oral meloxicam. Therefore, do not substitute similar dosing strengths of other meloxicam products for VIVLODEX.

Please see full Prescribing Information for additional important safety and dosing information.

About Iroko Pharmaceuticals, LLC

Iroko is a global specialty pharmaceutical company, based in Philadelphia, dedicated to advancing the science of analgesia. The company develops and globally commercializes pharmaceutical products. Iroko is at the forefront of the development of SoluMatrix® NSAIDs – new low dose drug products based on existing NSAIDs – using iCeutica Inc.'s proprietary SoluMatrix Fine Particle Technology™ exclusively licensed to Iroko for NSAIDs. VIVLODEX is the third SoluMatrix® NSAID and is available in pharmacies; VIVLODEX is approved by FDA. For more information, visit www.iroko.com.

Contacts:

Caitlin Finnegan for Iroko Pharmaceuticals, LLC, 212-303-2321

Meg Kramer, Iroko Pharmaceuticals, LLC, 267-546-1656

###

---

[1] Full Prescribing Information for VIVLODEX. 2015. Iroko Pharmaceuticals, LLC.
[2] McGettigan P, Henry D. Cardiovascular risk with non-steroidal anti-inflammatory drugs: systematic review of population-based controlled observational studies. *PLoS Med*. 2011;8(9):1-18.
[3] Castellsague J, Riera-Guardia N, Calingaert B, et al; on behalf of the investigators of the Safety of Non-steroidal Anti-Inflammatory Drugs (SOS) Project. Individual NSAIDs and upper gastrointestinal complication: a systematic review and meta-analysis of observational studies (the SOS Project). *Drug Saf*. 2012;35(12):1127-1146.
[4] U.S. Food and Drug Administration. Public Health Advisory - FDA Announces Important Changes and Additional Warnings for COX-2 Selective and Non-Selective Non-Steroidal Anti-Inflammatory Drugs (NSAIDs).
[5] Antman EM, Bennett HS, Daugherty A, Furberg C, Roberts H, Taubert KA; for the American Heart Association. Use of nonsteroidal anti-inflammatory drugs: an update for clinicians: a scientific statement from the American Heart Association. *Circulation*. 2007;115(12):1634-1642.
[6] Wilcox CM, Allison J, Benzuly K, et al. Consensus development conference on the use of non-steroidal inflammatory agents, including cyclooxygenase-2 enzyme inhibitors and aspirin. *Clin Gastroenterol Hepatol*. 2006;4(9)1082-1089.
[7] American College of Rheumatology Ad Hoc Group on Use of Selective and Nonselective Nonsteroidal Anti-inflammatory drug. Recommendations for use of selective and nonselective non-steroidal anti-inflammatory drugs. Recommendations for use of selective and nonselective non-steroidal drugs: an American College of Rheumatology white paper. *Arthritis Rheum*. 2008;59(8):1058-1073.
[8] Iroko Pharmaceuticals, LLC. Data on file.