New England Journal of Medicine Publishes Results from Pivotal Phase 3 Studies of Paratek's NUZYRA™ (Omadacycline) For Pneumonia and Skin Infections

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Once-daily IV-to-oral NUZYRA safe and effective in adults with pneumonia and skin infections, demonstrating clinical activity against relevant pneumonia- and skin-associated drug resistant bacteria

BOSTON, Feb. 06, 2019 (GLOBE NEWSWIRE) -- Paratek Pharmaceuticals, Inc. (NASDAQ: PRTK), a biopharmaceutical company focused on the development and commercialization of innovative therapies based upon tetracycline chemistry, announced *The New England Journal of Medicine (NEJM)* today published detailed results from the OPTIC and OASIS-1 Phase 3 clinical trials of NUZYRA™ (omadacycline).

NUZYRA is a modernized tetracycline that is a once-daily intravenous (IV) and oral for the treatment of community-acquired bacterial pneumonia (CABP) and acute bacterial skin and skin structure infections (ABSSSI). Both studies published in NEJM met all primary and secondary endpoints and showed that NUZYRA was safe and well-tolerated. NUZYRA was approved by the U.S. Food and Drug Administration on October 2, 2018 for the treatment of adults with CABP and ABSSSI and is now commercially available in the United States.

"Treating skin infections and pneumonia has become increasingly complex due to growing resistance among common pathogens, safety concerns surrounding current antibiotics and the limited availability of oral treatment options," said Keith Kaye, MD, MPH, Director of Research in the Division of Infectious Diseases at the University of Michigan Medical Center. "In both pneumonia and skin settings, NUZYRA's demonstrated efficacy against common pathogens, including pathogens resistant to other antibiotic classes, suggest that it has an important role for doctors in need of effective and safe IV and oral agents for their patients."

OPTIC (Omadacycline for Pneumonia Treatment in the Community) Study
OPTIC was a global, pivotal Phase 3 clinical study that compared the safety and efficacy of once-daily, IV-to-oral NUZYRA to IV-to-oral moxifloxacin for treating adults with CABP. OPTIC demonstrated that NUZYRA was non-inferior to moxifloxacin for the treatment of adults with CABP and was safe and well-tolerated. In the intent-to-treat population, NUZYRA (n=386) was non- inferior to moxifloxacin (n=388) for early clinical response (ECR) (81.1% vs. 82.7%; difference [95% CI]: -1.6 [-7.1, 3.8]) and investigator assessment of clinical response (IACR) at post-treatment evaluation (PTE) was 87.6% vs. 85.1% (difference: 2.5 [-2.4, 7.4]). Efficacy results were consistent across study populations, PORT Risk Class and causative pathogen.

The rate of serious treatment-emergent adverse events (TEAEs) was 6.0% in the NUZYRA-treated group and 6.7% in the moxifloxacin-treated group. The most common adverse events were gastrointestinal events (NUZYRA, 10.2%; moxifloxacin 18.0%) and included vomiting (2.6% vs. 1.5%), nausea (2.4% vs. 5.4%), and diarrhea (1.0% vs. 8.0%), respectively. There were no cases of *Clostridium difficile* colitis or infection in patients treated with NUZYRA, compared with eight cases (2.1%) in patients treated with moxifloxacin. The mortality rate was 2.1% with NUZYRA and 1.0% with moxifloxacin.

OASIS-1 (Omadacycline in Acute Skin and Skin Structure Infections Study)
The global pivotal Phase 3 registration study known as OASIS-1 evaluated the efficacy and safety of an IV to oral once-daily NUZYRA against twice-daily linezolid over a seven to 14-day course of therapy in 645 adult patients. OASIS-1 demonstrated that NUZYRA was non-inferior to linezolid for treating ABSSSI, with a similar safety profile. Efficacy results were consistent across study populations and sub-populations, type of skin infection and causative pathogen including MRSA.

In the modified intent-to-treat population (mITT), NUZYRA (n=316) was non-inferior (10% NI margin) to linezolid (n=311) for ECR (84.8% vs. 85.5%; difference [95% CI]: -0.7 [–6.3, 4.9]). NUZYRA also was non-inferior to linezolid for IACR at PTE in the mITT (86.1% vs. 83.6%; difference: 2.5 [-3.2, 8.2]) and clinically evaluable (96.3% vs. 93.5%; difference 2.8 [-1.0, 6.9]) populations. In both groups, efficacy was comparable for methicillin-susceptible and methicillin-resistant *Staphylococcus aureus* infections, which account for nearly half of all ABSSSI isolates in the United States.

Serious TEAEs occurred in 3.7% of NUZYRA patients and 2.5% of linezolid patients, none of which were considered related to study drug. Among TEAEs, gastrointestinal events were most common in both treatment groups (18.0% for NUZYRA and 15.8% for linezolid) and included nausea (12.4% vs. 9.9%), vomiting (5.3% vs. 5.0%), and diarrhea (2.2% vs. 3.1%), respectively. The mortality rate was 0.3% with NUZYRA and 0.6% with linezolid.

"The publication of two of our global Phase 3 trials in a journal as prestigious as *The New England Journal of Medicine* is an affirmation of the clinical impact to the practice of medicine in an era of growing resistance to older antibiotic agents and will help inform physicians' decisions as they treat these serious, often life-threatening, community-acquired infections," said Evan Loh, M.D., President, Chief Operating Officer and Chief Medical Officer, Paratek Pharmaceuticals, Inc. "These pivotal clinical trials demonstrated that NUZYRA is an effective, well-tolerated monotherapy option for patients with activity across an appropriate spectrum of bacteria, including Gram-positive, Gram-negative, atypicals, and drug resistant strains and we believe NUZYRA can play an important role in winning the battle against the growing health challenge of antibiotic resistance."

About Paratek Pharmaceuticals, Inc.
Paratek Pharmaceuticals, Inc. is a commercial-stage biopharmaceutical company focused on the development and commercialization of innovative therapeutics. The company's lead commercial product, NUZYRA, is a once-daily intravenous and oral antibiotic for the treatment of adults with community-acquired bacterial pneumonia and acute bacterial skin and skin structure infections. Paratek is also studying NUZYRA for the treatment of

urinary tract infections (UTI).

Paratek has submitted a marketing authorization application of omadacycline in the European Union. Paratek has entered into a collaboration agreement with Zai Lab for the development and commercialization of omadacycline in the greater China region and retains all remaining global rights.

Under a research agreement with the U.S. Department of Defense, omadacycline also is being studied against pathogenic agents causing infectious diseases of public health and biodefense importance, including plague and anthrax.

Paratek's second FDA approved product, SEYSARA™ (sarecycline), is marketed by Almirall, LLC in the U.S. as a new once-daily oral therapy for the treatment of moderate to severe acne vulgaris. Paratek retains development and commercialization rights in the rest of the world.

Recognizing the serious threat of bacterial infections, Paratek is dedicated to providing solutions that enable positive outcomes and lead to better patient stories.

For more information, visit www.ParatekPharma.com or follow @ParatekPharma on Twitter.

About NUZYRA
NUZYRA (omadacycline) is a novel antibiotic with both once-daily intravenous (IV) and oral formulations for the treatment of community-acquired bacterial pneumonia (CABP) and acute bacterial skin and skin structure infections (ABSSSI). A modernized tetracycline, NUZYRA is specifically designed to overcome tetracycline resistance and exhibits activity across a spectrum of bacteria, including Gram-positive, Gram-negative, atypicals, and other drug-resistant strains.

Indications and Usage
NUZYRA is a tetracycline class antibiotic indicated for the treatment of adult patients with the following infections caused by susceptible microorganisms:

Community-Acquired Bacterial Pneumonia (CABP) caused by the following:
Streptococcus pneumoniae, Staphylococcus aureus (methicillin-susceptible isolates), Haemophilus influenzae, Haemophilus parainfluenzae, Klebsiella pneumoniae, Legionella pneumophila, Mycoplasma pneumoniae, and Chlamydophila pneumoniae.

Acute Bacterial Skin and Skin Structure Infections (ABSSSI) caused by the following:
Staphylococcus aureus (methicillin-susceptible and -resistant isolates), Staphylococcus lugdunensis, Streptococcus pyogenes, Streptococcus anginosus grp. (includes S. anginosus, S. intermedius, and S. constellatus), Enterococcus faecalis, Enterbacter cloacae, and Klebsiella pneumoniae.

Usage
To reduce the development of drug-resistant bacteria and maintain the effectiveness of NUZYRA and other antibacterial drugs, NUZYRA should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria.

Important Safety Information

Contraindications
NUZYRA is contraindicated in patients with known hypersensitivity to omadacycline or tetracycline class antibacterial drugs, or to any of the excipients.

Warnings and Precautions
Mortality imbalance was observed in the CABP clinical trial with eight deaths (2%) occurring in patients treated with NUZYRA compared to four deaths (1%) in patients treated with moxifloxacin. The cause of the mortality imbalance has not been established. All deaths, in both treatment arms, occurred in patients >65 years of age; most patients had multiple comorbidities. The causes of death varied and included worsening and/or complications of infection and underlying conditions. Closely monitor clinical response to therapy in CABP patients, particularly in those at higher risk for mortality.

The use of NUZYRA during tooth development (last half of pregnancy, infancy and childhood to the age of 8 years) may cause permanent discoloration of the teeth (yellow-gray-brown) and enamel hypoplasia.

The use of NUZYRA during the second or third trimester of pregnancy, infancy and childhood up to the age of 8 years may cause irreversible inhibition of bone growth.

Hypersensitivity reactions have been reported with NUZYRA. Life-threatening hypersensitivity (anaphylactic) reactions have been reported with other tetracycline-class antibacterial drugs. NUZYRA is structurally similar to other tetracycline-class antibacterial drugs and is contraindicated in patients with known hypersensitivity to tetracycline-class antibacterial drugs. Discontinue NUZYRA if an allergic reaction occurs.

Clostridium difficile associated diarrhea (CDAD) has been reported with use of nearly all antibacterial agents and may range in severity from mild diarrhea to fatal colitis. Evaluate if diarrhea occurs.

NUZYRA is structurally similar to tetracycline-class of antibacterial drugs and may have similar adverse reactions. Adverse reactions including photosensitivity, pseudotumor cerebri, and anti-anabolic action which has led to increased BUN, azotemia, acidosis, hyperphosphatemia, pancreatitis, and abnormal liver function tests, have been reported for other tetracycline-class antibacterial drugs, and may occur with NUZYRA. Discontinue NUZYRA if any of these adverse reactions are suspected.

Prescribing NUZYRA in the absence of a proven or strongly suspected bacterial infection is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.

Adverse Reactions

The most common adverse reactions (incidence ≥ 2%) are nausea, vomiting, infusion site reactions, alanine aminotransferase increased, apartate aminotransferase increased, gamma-glutamyl transferase increased, hypertension, headache, diarrhea, insomnia, and constipation.

Drug Interactions

Patients who are on anticoagulant therapy may require downward adjustment of their anticoagulant dosage while taking NUZYRA.

Absorption of tetracyclines, including NUZYRA is impaired by antacids containing aluminum, calcium, or magnesium, bismuth subsalicylate and iron containing preparations.

Use in Specific Populations

Lactation: Breastfeeding is not recommended during treatment with NUZYRA

To report SUSPECTED ADVERSE REACTIONS, contact Paratek Pharmaceuticals, Inc. at 1-833-727-2835 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Please see full Prescribing Information for NUZYRA at www.NUZYRA.com.

Forward Looking Statements
This press release contains forward-looking statements including statements related to our overall strategy, product candidates, clinical studies, prospects, potential and expected results, including statements about the timing of commercialization of NUZYRA, the potential for omadacycline to serve as an empiric monotherapy treatment option for patients suffering from ABSSSI, CABP, and potentially UTI, and other bacterial infections when resistance is of concern, the prospect of omadacycline providing broad-spectrum activity, and our ability to make and sell NUZYRA. All statements, other than statements of historical facts, included in this press release are forward-looking statements, and are identified by words such as "advancing," "believe," "expect," "well positioned," "look forward," "anticipated," "continued," and other words and terms of similar meaning. These forward-looking statements are based upon our current expectations and involve substantial risks and uncertainties. We may not actually achieve the plans, carry out the intentions or meet the expectations or projections disclosed in our forward-looking statements and you should not place undue reliance on these forward-looking statements. Our actual results and the timing of events could differ materially from those included in such forward-looking statements as a result of these risks and uncertainties. These and other risk factors are discussed under "Risk Factors" and elsewhere in our Annual Report on Form 10-K for the year ended December 31, 2017, our Form 10-Q filed for the quarter ended September 30, 2018 and our other filings with the Securities and Exchange Commission. We expressly disclaim any obligation or undertaking to update or revise any forward-looking statements contained herein.

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