XACDURO®, The First and Only Antibiotic Developed to Target Acinetobacter, Now Available to Treat Hospital-Acquired Bacterial Pneumonia (HABP) and Ventilator-Associated Bacterial Pneumonia (VABP) in Adults

September 18, 2023

- XACDURO is a new FDA-approved treatment used to fight against HABP/VABP infections caused by isolates of *Acinetobacter baumannii-calcoaceticus* complex, which can include those resistant to carbapenems (CRAB).
- In the U.S., it is estimated there are more than 40,000 cases of *Acinetobacter* each year and approximately 40 percent are carbapenem-resistant.[1,2]
- Patients with HABP/VABP caused by *Acinetobacter* infections face high mortality and significant costs due to drug resistance and limited approved treatment options.

WALTHAM, Mass.--(BUSINESS WIRE)--Sep. 18, 2023-- Innoviva Specialty Therapeutics, a subsidiary of Innoviva, Inc. (Nasdaq: INVA), today announced that XACDURO® (sulbactam for injection; durlobactam for injection) is now available in the United States for patients 18 years of age and older for the treatment of hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia (HABP/VABP) caused by susceptible isolates of *Acinetobacter baumannii-calcoaceticus* complex (*Acinetobacter*).

“XACDURO’s pathogen-targeted approach is a significant advancement in the way healthcare professionals treat *Acinetobacter*, one of the most serious antibiotic-resistant pathogens known to cause life-threatening pneumonia that is associated with high morbidity and mortality rates,” said Pavel Raifeld, Chief Executive Officer, Innoviva. “The addition of XACDURO to our portfolio of critical care medicines underscores our commitment to this space by providing healthcare professionals with differentiated therapeutic options to help improve patient outcomes.”

XACDURO received regulatory approval from the U.S. Food and Drug Administration (FDA) in May 2023 and is now available by prescription through specialty pharmacy distributors in a healthcare setting. The FDA approval was based on strong scientific evidence, including results from the landmark Phase 3 ATTACK trial, published in *The Lancet: Infectious Disease*, evaluating the safety and efficacy of XACDURO versus colistin in patients with infections caused by *Acinetobacter*.[3] In the trial, XACDURO demonstrated statistical non-inferiority versus colistin for the primary endpoint of 28-day all-cause mortality in patients with carbapenem-resistant *Acinetobacter* infections and a significant difference in clinical cure rates.[3] XACDURO was well tolerated and exhibited a favorable safety profile across the clinical program. In clinical studies, XACDURO was shown to significantly lower the incidence of nephrotoxicity.[3] Fewer serious adverse events were observed compared to treatment with colistin, and there was lower treatment discontinuation due to adverse reactions versus colistin with one patient experiencing anaphylactic shock, which lead to discontinuation of treatment for that patient.[3]

Acinetobacter infections are now the fifth most common cause of deaths attributable to drug resistance across the globe and pose greatest threat to patients on ventilators in hospitals and nursing homes. The *Acinetobacter* pathogen has become resistant to most antibiotics used to treat HABP and VABP including carbapenems and third generation cephalosporins. This has caused *Acinetobacter* to become increasingly difficult to treat with no clear standard of care antibiotic regimen for these resistant infections.

“Every minute matters when managing critical care patients with life-threatening pneumonia, especially when caused by carbapenem-resistant *Acinetobacter baumannii* pathogen. Antibiotic-resistant pathogens can complicate treatment strategies and compromise treatment efficacy, often resulting in increased mortality rates for intensive care unit patients,” said Margaret Koziel, MD, Chief Medical Officer, Innoviva. “Other treatment options may have high rates of resistance and adverse events, including nephrotoxicity.[4] The availability of XACDURO is a much-needed advancement that can now provide healthcare professionals with an innovative therapy option to safely and effectively manage *Acinetobacter* pneumonia.”

About *Acinetobacter*

Members of the *Acinetobacter baumannii-calcoaceticus* complex (*Acinetobacter*) are Gram-negative, opportunistic human pathogens that predominantly infect critically ill patients, often resulting in severe pneumonia and bloodstream infections.[5] They can infect other body sites, such as the urinary tract and the skin.[5] *Acinetobacter* is considered a global threat in the healthcare setting due in part to its ability to acquire multidrug resistance.[6] *Acinetobacter* is resistant to penicillins and has also acquired resistance genes for almost all antibiotics used to treat Gram-negative bacteria, including fluoroquinolones, aminoglycosides, cephalosporins, and carbapenems.[6]

The Centers for Disease Control and Prevention (CDC) has identified carbapenem-resistant micro-organisms as an urgent threat.[7] Globally, *Acinetobacter baumannii* was among the top six leading pathogens for deaths associated with resistance in 2019.[8] Carbapenem-resistant *Acinetobacter* is considered a Priority 1 pathogen by the World Health Organization (WHO).[9] Globally, there are about a million cases each year of *Acinetobacter*, and about two-thirds of those are carbapenem-resistant *Acinetobacter baumannii*.[1] More than 300,000 global deaths annually are associated with carbapenem-resistant *Acinetobacter*.[8]

About XACDURO®

XACDURO® (sulbactam for injection; durlobactam for injection), co-packaged for intravenous use, is a combination of sulbactam, a beta-lactam antibacterial, and durlobactam, a beta-lactamase inhibitor, approved in patients 18 years of age and older for the treatment of hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia (HABP/VABP) caused by susceptible isolates of *Acinetobacter baumannii-calcoaceticus* complex (*Acinetobacter*). XACDURO is not indicated for the treatment of HABP/VABP caused by pathogens other than susceptible isolates of *Acinetobacter*.

XACDURO® INDICATION & USAGE

Indication
XACDURO® (sulbactam for injection; durlobactam for injection), co-packaged for intravenous use is indicated in adults for the treatment of hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia (HABP/VABP) caused by susceptible isolates of *Acinetobacter baumannii-calcoaceticus* complex.

Limitations of Use
XACDURO is not indicated for the treatment of HABP/VABP caused by pathogens other than susceptible isolates of *Acinetobacter baumannii-calcoaceticus* complex.

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

IMPORTANT SAFETY INFORMATION

Contraindications: XACDURO is contraindicated in patients with a history of known severe hypersensitivity to the components of XACDURO or other beta-lactam antibacterial drugs.

Warnings and Precautions:

- Hypersensitivity was observed in patients treated with XACDURO in clinical trials. Serious and occasionally fatal hypersensitivity (anaphylactic) reactions and serious skin reactions have been reported in patients receiving beta-lactam antibacterial drugs. Before initiating therapy with XACDURO, careful inquiry should be made concerning previous hypersensitivity reactions to carbapenems, penicillins, cephalosporins, other beta lactams, and other allergens. If an allergic reaction occurs, discontinue XACDURO.
- *Clostridioides 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. If CDAD is suspected or confirmed, the risk/benefit of continuing treatment with XACDURO should be assessed.
- Prescribing XACDURO in the absence of a proven or strongly suspected bacterial infection or a prophylactic indication 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 reported in >10% of patients treated with XACDURO were liver test abnormalities (19%), diarrhea (17%), anemia (13%), and hypokalemia (12%).

To report SUSPECTED ADVERSE REACTIONS, contact Innoviva Specialty Therapeutics, Inc. at 1-800-651-3861 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Before administering, please see the Full Prescribing Information for XACDURO.

About Innoviva Specialty Therapeutics
Innoviva Specialty Therapeutics, a subsidiary of Innoviva, Inc., is focused on delivering innovative therapies in critical care and infectious disease. Innoviva Specialty Therapeutics' products, through its affiliate, La Jolla Pharmaceutical Company, include GIAPREZA® (angiotensin II), approved to increase blood pressure in adults with septic or other distributive shock, and XERAVA® (eravacycline) for the treatment of complicated intra-abdominal infections in adults. Innoviva Specialty Therapeutics' products, through its affiliate, Entasis Therapeutics Inc., include XACDURO® (sulbactam for injection; durlobactam for injection), co-packaged for intravenous use approved for the treatment of adults with hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia caused by susceptible strains of *Acinetobacter baumannii-calcoaceticus* complex (*Acinetobacter*). For more information about Innoviva Specialty Therapeutics, please visit here.

About Innoviva
Innoviva, Inc., is a diversified holding company with a portfolio of royalties and other healthcare assets, including Innoviva Specialty Therapeutics, a subsidiary focused on delivering innovative therapies in critical care and infectious disease. Innoviva's royalty portfolio includes respiratory assets partnered with Glaxo Group Limited (GSK), including RELVAR®/BREO® ELLIPTA® (fluticasone furoate/vilanterol, FF/VI) and ANORO® ELLIPTA® (umeclidinium bromide/vilanterol, UMEC/VI). Under the Long-Acting Beta2 Agonist (LABA) Collaboration Agreement, Innoviva is entitled to receive royalties from GSK on sales of RELVAR®/BREO® ELLIPTA® and ANORO® ELLIPTA®. ANORO®, RELVAR® and BREO® are trademarks of the GSK group of companies. For more information on Innoviva, please visit here.

Forward Looking Statements
This press release contains certain "forward-looking" statements as that term is defined in the Private Securities Litigation Reform Act of 1995 regarding, among other things, statements relating to goals, plans, objectives, and future events. Innoviva intends such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. The words "anticipate", "expect", "goal", "intend", "objective", "opportunity", "plan", "potential", "target" and similar expressions are intended to identify such forward-looking statements. Such forward-looking statements involve substantial risks, uncertainties, and assumptions. These statements are based on the current estimates and assumptions of the management of Innoviva as of the date of this press release and are subject to known and unknown risks, uncertainties, changes in circumstances, assumptions and other factors that may cause the actual results of Innoviva to be materially different from those reflected in the forward-looking statements. Important factors that could cause actual results to differ materially from those indicated by such forward-looking statements include, among others, risks related to: expected cost savings; lower than expected future royalty revenue from respiratory products partnered with GSK; the commercialization of RELVAR®/BREO® ELLIPTA®, ANORO® ELLIPTA® and, formerly, TRELEGY® ELLIPTA® in the jurisdictions in which these products have been approved; the strategies, plans and objectives of Innoviva (including Innoviva's growth strategy and corporate development initiatives beyond the existing respiratory portfolio);

the timing, manner, and amount of potential capital returns to shareholders; the status and timing of clinical studies, data analysis and communication of results; the potential benefits and mechanisms of action of product candidates; expectations for product candidates through development and commercialization; the timing of regulatory approval of product candidates; and projections of revenue, expenses and other financial items; the impact of the novel coronavirus (COVID-19). Other risks affecting Innoviva are described under the headings “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” contained in Innoviva’s Annual Report on Form 10-K for the year ended December 31, 2022 and Quarterly Reports on Form 10-Q, which are on file with the Securities and Exchange Commission (SEC) and available on the SEC’s website at www.sec.gov. Past performance is not necessarily indicative of future results. No forward-looking statements can be guaranteed, and actual results may differ materially from such statements. Given these uncertainties, you should not place undue reliance on these forward-looking statements. The information in this press release is provided only as of the date hereof, and Innoviva assumes no obligation to update its forward-looking statements on account of new information, future events or otherwise, except as required by law.

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