

Shionogi's FETROJA® (cefiderocol) Now Available for the Treatment of Complicated Urinary Tract Infections in the U.S.

OSAKA, Japan, February 25, 2020 – Shionogi & Co., Ltd. (hereafter “Shionogi”) today announced FETROJA® (cefiderocol) is now available in the U.S. for patients 18 years of age or older who have limited or no alternative treatment options, for the treatment of complicated urinary tract infections (cUTIs), including pyelonephritis, caused by the following susceptible Gram-negative microorganisms: *Escherichia coli* (*E. coli*), *Klebsiella pneumoniae* (*K. pneumoniae*), *Proteus mirabilis* (*P. mirabilis*), *Pseudomonas aeruginosa* (*P. aeruginosa*), and *Enterobacter cloacae* (*E. cloacae*) complex. FETROJA, which was approved by the U.S. Food and Drug Administration on November 14, 2019, is the first approved antibiotic that functions as a siderophore and has the ability to overcome many of the resistance mechanisms that Gram-negative bacteria employ against antibiotics. Under FETROJA’s Qualified Infectious Disease Product (QIDP) status, approval of the cUTI indication was based on limited clinical safety and efficacy data.

“The infectious disease community faces a serious challenge in combating cUTIs caused by Gram-negative pathogens, leading to high mortality rates. This illustrates a dire need for a treatment option able to overcome many mechanisms of resistance in Gram-negative bacteria,” said Akira Kato, Ph.D., president and CEO at Shionogi Inc.

The increasing resistance of many infections caused by Gram-negative bacteria to existing therapies, including carbapenem-resistant Enterobacteriaceae and non-fermenting species such as *P. aeruginosa*, *Acinetobacter baumannii* (*A. baumannii*), and *Stenotrophomonas maltophilia* (*S. maltophilia*), poses a serious health challenge.¹⁻⁵ There is an increasing number of Gram-negative pathogens resistant to multiple antibiotics, making them difficult to treat and resulting in high mortality rates.⁶ In the United States, more than 2.8 million antibiotic-resistant infections occur each year, and more than 35,000 people die as a result.⁷ If no action is taken, antibiotic resistance is predicted to kill 10 million people every year by 2050 at a cumulative cost to global economic output of 100 trillion USD.⁸ The World Health Organization (WHO) and the Centers for Disease Control and Prevention have identified carbapenem-resistant strains of Enterobacteriaceae, *P. aeruginosa*, and *A. baumannii* as the top priorities in the research and development of new antibiotics.^{2,7}

“We are proud to make FETROJA available for patients and their infectious disease care teams. Currently, FETROJA is the only available antibiotic which provides *in vitro* coverage against all Gram-negative pathogens considered top priority by the WHO,” said Nate McCutcheon, Chief Commercial Officer, Shionogi Inc. “At Shionogi, we are currently expanding our organization to better assist hospitals and infectious disease specialists to support this community in dire need.”

Press Release



Please visit www.fetroja.com for more information.

About FETROJA® (cefiderocol) for injection

FETROJA® (cefiderocol) is a cephalosporin antibiotic with a novel mechanism for penetrating the outer cell membrane of Gram-negative pathogens by acting as a siderophore. In addition to entering cells by passive diffusion through porin channels, FETROJA binds to ferric iron and is actively transported into bacterial cells through the outer membrane via the bacterial iron transporters, which function to incorporate this essential nutrient for bacteria.⁹ These mechanisms allow cefiderocol to achieve high concentrations in the periplasmic space where it can bind to penicillin-binding proteins and inhibit cell wall synthesis in the bacterial cells.⁹ FETROJA has also demonstrated *in vitro* activity against certain bacteria that contain very problematic resistant enzymes such as ESBLs, AmpC, serine- and metallo-carbapenemases.⁹ Data from multinational surveillance studies for FETROJA demonstrated potent *in vitro* activity against a wide spectrum of Gram-negative pathogens including carbapenem-resistant *A. baumannii*, *P. aeruginosa*, Enterobacteriaceae, and *S. maltophilia*.¹ The clinical significance of the *in vitro* data is unknown. FETROJA has poor *in vitro* activity against Gram-positive or anaerobic bacteria.

Shionogi also submitted a marketing authorization application for cefiderocol to the European Medicines Agency and it was accepted in March 2019.¹⁰

Shionogi's Commitment to Fighting Antimicrobial Resistance

Shionogi has a strong heritage in the field of anti-infectives and has been developing antimicrobial therapies for more than 50 years. Shionogi is proud to be one of the few large pharmaceutical companies that continues to focus on research and development in anti-infectives. The company invests the highest proportion of its pharmaceutical revenues in relevant anti-infectives R&D compared to other large pharmaceutical companies.¹¹

About Shionogi

Shionogi & Co., Ltd. is a Japanese major research-driven pharmaceutical company dedicated to bringing benefits to patients based on its corporate philosophy of “supplying the best possible medicine to protect the health and wellbeing of the patients we serve.” The company currently markets products in several therapeutic areas including anti-infectives, pain, cardiovascular diseases, and gastroenterology. Our pipeline is focused on infectious disease, pain, CNS, and oncology. For more information on Shionogi & Co., Ltd., visit www.shionogi.co.jp/en. Shionogi Inc. is the U.S. subsidiary of Shionogi & Co., Ltd. based in N.J. For more information on Shionogi Inc., please visit www.shionogi.com.

Forward-Looking Statements

This announcement contains forward-looking statements. These statements are based on expectations in light of the information currently available, assumptions that are subject to risks and uncertainties which could cause actual results to differ materially from these statements. Risks and uncertainties include general domestic and international economic conditions such as general industry and market conditions, and changes of interest rate and currency exchange rate. These risks and uncertainties particularly apply with respect to product-related forward-looking statements. Product risks and uncertainties include, but are not limited to, completion and discontinuation of clinical trials; obtaining regulatory approvals; claims and concerns about product safety and efficacy; technological advances; adverse outcome of important litigation; domestic and foreign healthcare reforms and changes of laws and regulations. Also, for existing products, there are manufacturing and marketing risks, which include, but are not limited to, inability to build production capacity to meet demand, unavailability of raw materials, and entry of competitive products. The company disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events, or otherwise.

For further information, contact:

Shionogi & Co., Ltd.

Corporate Communications

Telephone: +81-6-6209-7885

Fax: +81-6-6229-9596

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