RECARBRIO™
(imipenem, cilastatin, and relebactam) for injection 1.25 g

Availability of Antimicrobial Susceptibility Testing Devices

Indications

RECARBRIO is indicated for the treatment of patients 18 years of age and older with hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia (HABP/VABP), caused by the following susceptible gram-negative microorganisms: *Acinetobacter calcoaceticus-baumannii complex, Enterobacter cloacae, Escherichia coli, Haemophilus influenzae, Klebsiella aerogenes, Klebsiella oxytoca, Klebsiella pneumoniae, Pseudomonas aeruginosa* and *Serratia marcescens.*

RECARBRIO is indicated in patients 18 years of age and older who have limited or no alternative treatment options, for the treatment of complicated urinary tract infections (cUTI), including pyelonephritis, caused by the following susceptible gram-negative microorganisms: *Enterobacter cloacae, Escherichia coli, Klebsiella aerogenes, Klebsiella pneumoniae,* and *Pseudomonas aeruginosa.*

RECARBRIO is indicated in patients 18 years of age and older who have limited or no alternative treatment options for the treatment of complicated intra-abdominal infections (cIAI) caused by the following susceptible gram-negative microorganisms: *Bacteroides caccae, Bacteroides fragilis, Bacteroides ovatus, Bacteroides stercoris, Bacteroides thetaiotaomicron, Bacteroides uniformis, Bacteroides vulgatus, Citrobacter freundii, Enterobacter cloacae, Escherichia coli, Fusobacterium nucleatum, Klebsiella aerogenes, Klebsiella oxytoca, Klebsiella pneumoniae, Parabacteroides distasonis,* and *Pseudomonas aeruginosa.*

Approval of the cUTI and cIAI indications is based on limited clinical safety and efficacy data for RECARBRIO.

Usage

To reduce the development of drug-resistant bacteria and maintain the effectiveness of RECARBRIO and other antibacterial drugs, RECARBRIO should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria. When culture and susceptibility information are available, they should be considered in selecting or modifying antibacterial therapy. In the absence of such data, local epidemiology and susceptibility patterns may contribute to the empiric selection of therapy.

Please see Selected Safety Information on the following pages.

Available Antimicrobial Susceptibility Testing Devices for RECARBRIO

Susceptibility Disk From Hardy Diagnostics[1]

Ordering Information:

Description	Catalog Number
HardyDisk™ AST Imipenem/Relebactam (10µg/25µg) 1x50 cartridge	Z9441
HardyDisk™ AST Imipenem/Relebactam (10µg/25µg) 5x50 cartridge	Z9445

Photo credit: Hardy Diagnostics

- Available in single cartridge (Z9441) or packs of 5 (Z9445).
- Compatible with BBL dispenser.
- For in vitro diagnostic use only. Observe approved biohazard precautions and aseptic techniques. This product is to be used only by adequately trained and qualified laboratory personnel. Sterilize all biohazard waste before disposal.

Visit www.hardydiagnostics.com for complete Instructions for Use (IFU). (800) 266-2222.

HardyDisk is a registered trademark of Hardy Diagnostics.

ETEST® IPR Test Strip From bioMérieux For Enterobacterales Only[2]

Ordering Information:

Description	µg/mL	Strips/Box	Ref.
ETEST® Imipenem/Relebactam	0.002/4-32/4	Single pack: 30 test strips	420927
ETEST® Imipenem/Relebactam	0.002/4-32/4	Multi pack: 100 test strips	423989

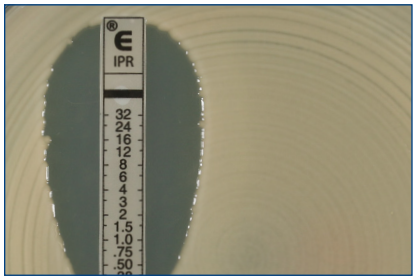

Photo credit: bioMérieux

- Not to be used for *Pseudomonas aeruginosa.*
- The ETEST IPR strip is an in vitro quantitative technique of Antimicrobial Susceptibility Testing (AST) for determining a Minimum Inhibitory Concentration (MIC) for imipenem/relebactam.
- For in vitro diagnostic use only. Observe approved biohazard precautions and aseptic techniques. This product is to be used only by adequately trained and qualified laboratory personnel. Sterilize all biohazard waste before disposal.

For more information, visit www.biomerieux-usa.com/etest. Customer Service (800) 682-2666.

ETEST is a registered trademark of bioMérieux.

Selected Safety Information

Hypersensitivity Reactions: RECARBRIO is contraindicated in patients with a history of known severe hypersensitivity (severe systemic allergic reaction such as anaphylaxis) to any component of RECARBRIO. Serious and occasionally fatal hypersensitivity (anaphylactic) reactions have been reported in patients receiving therapy with beta-lactams. Before initiating therapy with RECARBRIO, careful inquiry should be made concerning previous hypersensitivity reactions to carbapenems, penicillins, cephalosporins, other beta-lactams, and other allergens. If a hypersensitivity reaction to RECARBRIO occurs, discontinue the therapy immediately.

Seizures and Other Central Nervous System (CNS) Adverse Reactions: CNS adverse reactions, such as seizures, confusional states, and myoclonic activity, have been reported during treatment with imipenem/cilastatin, a component of RECARBRIO, especially when recommended dosages of imipenem were exceeded. These have been reported most commonly in patients with CNS disorders (eg, brain lesions or history of seizures) and/or compromised renal function.

Please see additional Selected Safety Information on the following pages.

RECARBRIO™
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Available Antimicrobial Susceptibility Testing Devices for RECARBRIO

MIC Test Strip From Liofilchem® [3]

Ordering Information:

Description	µg/mL	Strips/Box	Ref.
Imipenem/Relebactam	0.002/4 - 32/4	10	920761
Imipenem/Relebactam	0.002/4 - 32/4	30	92076
Imipenem/Relebactam	0.002/4 - 32/4	100	920760

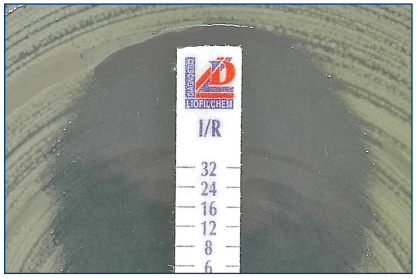

Photo credit: Liofilchem

- For in vitro diagnostic use only. Observe approved biohazard precautions and aseptic techniques. This product is to be used only by adequately trained and qualified laboratory personnel. Sterilize all biohazard waste before disposal.

For further information or purchase orders, contact Liofilchem at orders@liofilchem.us, call (781) 902-0312, or visit www.liofilchem.com.

Liofilchem and the Liofilchem company logo are registered trademarks of LIOFILCHEM s.r.l.

Additionally, Liofilchem MIC Test Strip can also be purchased at Fisher Healthcare. Visit fisherhealthcare.com, call (800) 640-0640, or contact your Fisher Healthcare sales representative to learn more.

Thermo Scientific™ Sensititre™ Gram-Negative Standard MIC Plates[4]

Ordering Information:

Description	Format	Pack Size	Ref.
Sensititre Gram-Negative Novel Drug Plate	Multi-antibiotic plates including imipenem/ relebactam (0.03/4-16/4)	10x Microtitre Plates	MDRGN3F
Sensititre Gram-Negative Novel Drug Plate with Colistin	Multi-antibiotic plates including imipenem/ relebactam (0.03/4-16/4)	10x Microtitre Plates	MDRGNX4F

Photo credit: Thermo Fisher Scientific

- Manual to fully automated plate reading.
- MIC results.
- For in vitro diagnostic use only. Observe approved biohazard precautions and aseptic techniques. This product is to be used only by adequately trained and qualified laboratory personnel. Sterilize all biohazard waste before disposal.

For more information, contact your local Thermo Fisher Scientific Microbiology at csemail@thermofisher.com or visit www.thermofisher.com/AST.

Thermo Scientific and Sensititre are trademarks of Thermo Fisher Scientific Inc. and its subsidiaries.

Selected Safety Information (*continued*)

Anticonvulsant therapy should be continued in patients with known seizure disorders. If CNS adverse reactions including seizures occur, patients should undergo a neurological evaluation to determine whether RECARBRIO should be discontinued.

Increased Seizure Potential Due to Interaction with Valproic Acid: Concomitant use of RECARBRIO, with valproic acid or divalproex sodium may increase the risk of breakthrough seizures. Avoid concomitant use of RECARBRIO with valproic acid or divalproex sodium or consider alternative antibacterial drugs other than carbapenems.

Please see additional Selected Safety Information on the following pages.

RECARBRIO™ (imipenem, cilastatin, and relebactam) for injection 1.25 g

Available Antimicrobial Susceptibility Testing Devices for RECARBRIO

VITEK® 2 AST Gram-Negative Susceptibility Cards With Imipenem/Relebactam, Available From bioMérieux[5]

Ordering Information:

Description	MIC calling range for imipenem/ relebactam in µg/mL	Cards/ Box	Ref.
AST-N804	• Imipenem MIC range: 0.25 – 16 µg/mL • Relebactam: 4 µg/mL	20 Cards per Box	424634
AST-N813	• Imipenem MIC range: 0.25 – 16 µg/mL • Relebactam: 4 µg/mL	20 Cards per Box	424722
AST-XN30	• Imipenem MIC range: 0.25 – 16 µg/mL • Relebactam: 4 µg/mL	20 Cards per Box	424639
AST-XN31	• Imipenem MIC range: 0.25 – 16 µg/mL • Relebactam: 4 µg/mL	20 Cards per Box	424640
AST-XN32	• Imipenem MIC range: 0.25 – 16 µg/mL • Relebactam: 4 µg/mL	20 Cards per Box	424678
AST-XN33	• Imipenem MIC range: 0.25 – 16 µg/mL • Relebactam: 4 µg/mL	20 Cards per Box	424723

Photo credit: bioMérieux SA; VITEK 2 Cards

- The VITEK 2 AST-N804 gram-negative Susceptibility Card is intended for use with the VITEK 2 system in clinical laboratories as an in vitro test to determine the susceptibility of select aerobic gram-negative bacilli to antimicrobial agents when used as instructed in VITEK 2 labeling.
- For in vitro diagnostic use only. Observe approved biohazard precautions and aseptic techniques. This product is to be used only by adequately trained and qualified laboratory personnel. Sterilize all biohazard waste before disposal.
- Contact bioMérieux at (800) 682-2666 for information about software for VITEK 2.

Selected Safety Information (*continued*)

***Clostridioides difficile*–Associated Diarrhea (CDAD)** has been reported with use of nearly all antibacterial agents, including RECARBRIO, and may range in severity from mild diarrhea to fatal colitis. Careful medical history is necessary since CDAD has been reported to occur over two months after the administration of antibacterial agents. If CDAD is suspected or confirmed, ongoing antibacterial drug use not directed against *C difficile* may need to be discontinued.

Development of Drug-Resistant Bacteria: Prescribing RECARBRIO in the absence of a proven or strongly suspected bacterial infection or prophylactic indication is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.

Please see additional Selected Safety Information on the following pages.

RECARBRIO™
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FDA and CLSI Approved Susceptibility Interpretive Criteria for Imipenem/Cilastatin/Relebactam[6,7]

FDA Identified Breakpoints

Pathogen	Minimum Inhibitory Concentrations (mcg/mL)			Disk Diffusion (zone diameter in mm)		
	S	I	R	S	I	R
Enterobacteriaceae[a]	≤1/4	2/4	≥4/4	≥25	21-24	≤20
Pseudomonas aeruginosa	≤2/4	4/4	≥8/4	≥23	20-22	≤19
Acinetobacter calcoaceticus-baumannii complex[b]	≤2/4	4/4	≥8/4	–	–	–
Haemophilus influenzae[b]	≤4/4	–	–	–	–	–
Anaerobes[c,d]	≤4/4	8/4	≥16/4	–	–	–

S = Susceptible; I = Intermediate; R = Resistant

[a]Clinical efficacy was shown for *Klebsiella aerogenes, Enterobacter cloacae, Escherichia coli, Klebsiella pneumoniae, Citrobacter freundii, Klebsiella oxytoca.*

[b]FDA Identified Breakpoint only.

[c]Clinical efficacy was shown for *Bacteroides caccae, Bacteroides fragilis, Bacteroides ovatus, Bacteroides stercoris, Bacteroides thetaiotaomicron, Fusobacterium nucleatum, Parabacteroides distasonis.*

[d]Agar dilution method.

To order clinical isolates to perform verification testing for imipenem/relebactam contact the CDC or send requests via the following URL: https://wwwn.cdc.gov/ARIsolateBank/Panel/PanelDetail?ID=1034

References: 1. HardyDisks™ Imipenem/Relebactam, IMR35. Santa Maria, CA: Hardy Disk Diagnostics. Accessed January 22, 2024. https://hardydiagnostics.com/z9445 **2.** ETEST® Imipenem/Relebactam. Salt Lake City, UT: bioMérieuxUSA. Accessed January 22, 2024. https://www.biomerieux-usa.com/product/etest-imipenem-relebactam **3.** Liofilchem® MTS™ (MIC Test Strip). Roseto degli Abruzzi (Te) Italy: Liofilchem® s.r.l. Accessed January 22, 2024. https://www.liofilchem.com/solutions/clinical/arm/mts-mic-test-strip **4.** Thermo Scientific™ Sensititre™ Gram Positive MIC Plate. Waltham, MA :Thermo Scientific™. Accessed January 22, 2024. https://www.thermofisher.com/search/browse/category/us/en/90222073 **5.** VITEK® 2 New Gram-Negative AST Portfolio from bioMérieux PRN 066862. Salt Lake City, UT: bioMérieuxUSA. Accessed January 22, 2024. www.biomerieux-usa.com/patents **6.** U.S. Food and Drug Administration. FDA-Recognized Antimicrobial Susceptibility Test Interpretive Criteria. Accessed January 24, 2024. https://www.fda.gov/drugs/development-resources/fda-recognized-antimicrobial-susceptibility-test-interpretive-criteria **7.** Clinical and Laboratory Standards Institute (CLSI). *Performance Standards for Antimicrobial Susceptibility Testing.* 33rd ed. CLSI supplement M100 ISBN 978-1-68440-171-0. Clinical and Laboratory Standards Institute, USA, 2023.

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Selected Safety Information (*continued*)

Adverse Reactions: The most frequently reported adverse reactions occurring in ≥5% of HABP/VABP patients treated with RECARBRIO were aspartate aminotransferase increased (11.7%), anemia (10.5%), alanine aminotransferase increased (9.8%), diarrhea (7.9%), hypokalemia (7.9%), and hyponatremia (6.4%).

The most frequently reported adverse reactions occurring in ≥2% of cUTI and cIAI patients treated with RECARBRIO were diarrhea (6%), nausea (6%), headache (4%), vomiting (3%), alanine aminotransferase increased (3%), aspartate aminotransferase increased (3%), phlebitis/infusion site reactions (2%), pyrexia (2%), and hypertension (2%).

Before prescribing RECARBRIO, please read the accompanying Prescribing Information.

RECARBRIO™ (imipenem, cilastatin, and relebactam) for injection 1.25 g