



Search here...

Mark List

Cart 0



Current Drug Research  
Reviews

Editor-in-Chief >>

ISSN (Print): 2589-9775  
ISSN (Online): 2589-9783

Back

Journal ▾

Subscribe

Review Article

## Carbapenem Antibiotics: Recent Update on Synthesis and Pharmacological Activities

Author(s): [Abhishek Tiwari\\*](#)<sup>ID</sup>, [Varsha Tiwari](#)<sup>ID</sup>, [Biswa Mohan Sahoo](#), [Bimal Krishna Banik](#)<sup>ID</sup>, [Manish Kumar](#)<sup>ID</sup> and [Navneet Verma](#)

Volume 15, Issue 1, 2023

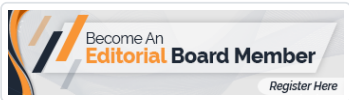
Published on: 07 November, 2022

Page: [35 - 61]

Pages: 27

DOI: [10.2174/2589977514666220907141939](https://doi.org/10.2174/2589977514666220907141939)

Price: \$65



### Abstract

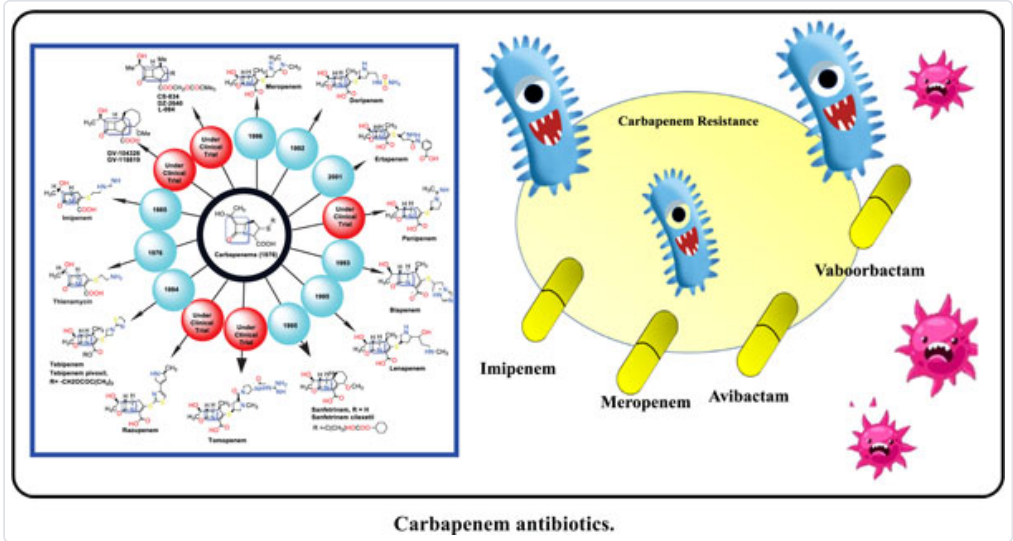
Right from the breakthrough of carbapenems since 1976, many schemes on synthesis, structure-activity relationship (SAR), and biological activities have been carried out, and several carbapenems have been developed, including parentally active carbapenems like imipenem, doripenem, biapenem, meropenem, ertapenem, panipenem, razupenem, tomopenem, and cilastatin, whereas orally active carbapenems like GV-118819, GV-104326, CS-834, L-084, DZ-2640, CL 191, 121, L-646, 591, S-4661, ER-35768, MK-826. Prodrugs of carbapenem with increased bioavailability include temopenem, tebipenem, sanfetrinem, LK-157, and CP 5484. Merck, Glaxo Wellcome Research Group, Johnson & Johnson, Sankyo Group and Dai-ichi Group, and Wyeth-Ayerst Group were among the businesses that produced carbapenems. In this review Witting reaction, Mitsunobu reaction, Dieckmann reaction, palladium-catalyzed hydrogenolysis, E. coli-based cloned synthesis, as well as biosynthetic enzymes such as carbapenem synthetase (carA), carboxymethylproline synthase (carB), carbapenem synthase (carC) are included. Carbapenems are biologically mainly active in the infections like urinary tract infections, bloodstream infections, tuberculosis, intra-abdominal infections, and pathogens like anaerobes, gram-positive and gram-negative bacteria.

**Keywords:** [Carbapenem](#), [antibiotics](#), [structure](#), [chemistry](#), [resistance](#), [mechanism of action](#).

« Previous

Next »

### Graphical Abstract



Article Metrics



8

### FIND YOUR INSTITUTION

#### Journal Information

- > About Journal
- > Editorial Board
- > Current Issue
- > Volumes/Issues

#### For Authors & Reviewers

#### Explore Articles

#### Open Access

#### For Visitors

Mark Item

Purchase PDF

Rights & Permissions

Print

Export

Cite as

We recommend

Cefiderocol: A new Antimicrobial for Complicated Urinary Tract Infection (UTI) Caused by Carbapenem-resistant Enterobacteriaceae (CRE) Suparna Chatterjee et al., Current Drug Research Reviews, 2022	High-throughput screening identifies established drugs as SARS-CoV-2 PLpro inhibitors Yao Zhao et al., Protein & Cell, 2021
The Rise of Carbapenem-Resistant Acinetobacter baumannii Benjamin A. Evans et al., Curr Pharm Des, 2012	High-throughput screening identifies established drugs as SARS-CoV-2 PLpro inhibitors Yao Zhao et al., Protein & Cell, 2021
Salicylanilide Ester Prodrugs as Potential Antimicrobial Agents - a Review Martin Kratky et al., Curr Pharm Des, 2011	Review of pharmacologic and immunologic agents in the management of COVID-19 Marzuq A. Ungogo et al., Biosafety and Health, 2021
In-vitro susceptibility testing methods for ceftazidime-avibactam against carbapenem-resistant Enterobacterales: Comparison with reference broth microdilution method Bhawna Sharma et al., Curr Drug Saf, 2022	Molecular targets for COVID-19 drug development: Enlightening Nigerians about the pandemic and future treatment Yusuf Muhammed, Biosafety and Health, 2020
An Overview of Chromatographic Analysis of Sulfonamides in Pharmaceutical Preparations and Biological Fluids Evanthia P. Tolika et al., Current Pharmaceutical Analysis, 2012	Docking-based inverse virtual screening: methods, applications, and challenges Xianjin Xu et al., Biophysics Reports, 2018

Powered by TREND MD

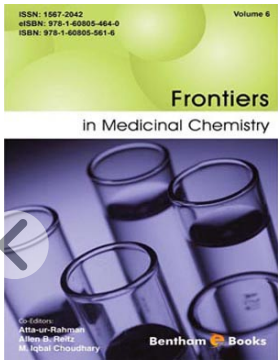
Related Journals



The Natural Products Journal

View More >>

Related Books



Frontiers in Medicinal Chemistry

View More >>

