

عنوان مقاله:

Novel drug candidates against antibiotic-resistant microorganisms: A review

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خلاصه مقاله:

Antibiotic resistance is fast spreading globally, leading to treatment failures and adverse clinical outcomes. This review focuses on the resistance mechanisms of the top five threatening pathogens identified by the World Health Organization's global priority pathogens list: carbapenem-resistant *Acinetobacter baumannii*, carbapenem-resistant *Pseudomonas aeruginosa*, carbapenem-resistant, extended-spectrum beta-lactamase (ESBL)-producing

Enterobacteriaceae, vancomycin-resistant Enterococcus faecium and methicillin, vancomycin-resistant Staphylococcus aureus. Several novel drug candidates have shown promising results from in vitro and in vivo studies, as well as clinical trials. The novel drugs against carbapenem-resistant bacteria include LCB₁₀₋₀₂₀₀, apramycin, and eravacycline, while for Enterobacteriaceae, the drug candidates are LysSAP-26, DDS-04, SPR-206, nitroxoline, cefiderocol, and plazomicin. TNP-209, KBP-7072, and CRS³¹²³ are agents against E. faecium, while Debio 1450, gepotidacin, delafloxacin, and dalbavancin are drugs against antibiotic-resistant S. aureus. In addition to these identified drug candidates, continued in vitro and in vivo studies are required to investigate small molecules with potential antibacterial effects screened by computational receptor docking. As drug discovery progresses, preclinical and clinical studies should also be extensively conducted on the currently available therapeutic agents to unravel their potential antibacterial effect and spectrum of activity, as well as safety and efficacy profiles

کلمات کلیدی:

Antibacterial agents, Antibacterial drug resistance, Antibiotic resistance, Antimicrobial agent, Drug discovery, Microbial, Pharmacology

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