Special Issue

Covalent Inhibitors of Pathogenic Bacterial, Protozoal, Viral, and Fungal Targets

Message from the Guest Editors

Most FDA-approved drugs bind reversibly, with noncovalent interactions to their corresponding macromolecular targets. Most early covalent drugs were discovered serendipitously, exerting their activity by binding to active enzyme sites. Therefore, early covalent drugs often mimic a substrate transition state to enable covalent modification of a catalytic amino acid residue. Covalent labeling has multiple advantages as a tool in probe and drug development. Covalent conjugation has inhibited targets at protein–protein interactions (PPIs) previously considered undruggable. Approval of an array of covalent drugs across several indications, primarily focused on cancer therapy by the FDA, demonstrates the promise of the rational design of covalent drugs in targeting non-catalytic/non-conserved amino acids to increase selectivity has become a reality. The covalent inhibitor conjugation is currently dominated by thiol-reactive electrophiles that react with cysteines. We invite colleagues investigating covalent modulators for the pathogenic bacterial, protozoal, and viral biological targets (enzymes) to submit their manuscripts to this Special Issue as original research and reviews.

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Message from the Editor-in-Chief

The worldwide impact of infectious disease is incalculable. The consequences for human health in terms of morbidity and mortality are obvious and vast but, when infections of animals and plants are also taken into account, it is hard to imagine any other disease that has such a significant impact on our lives—on healthcare systems, on agriculture and on world economics. *Pathogens* is proud to continue to serve the international community by publishing high quality studies that further our understanding of infection and have meaningful consequences for disease intervention.

Editor-in-Chief

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