ACS Infectious Diseases

In This Issue

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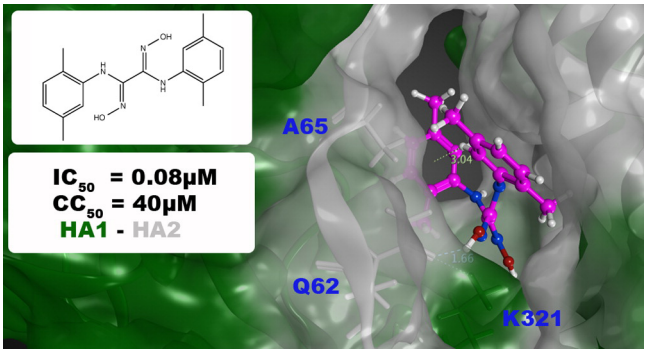
NEW COMPOUND ON THE FLU BLOCK

Influenza virus is a major human pathogen causing significant morbidity and mortality in annual epidemics. The current speed of vaccine production is insufficient to keep up with a rapidly spreading virus, and antivirals will play a key role in future pandemic responses. Furthermore, increasing resistance of influenza A viruses to current antiviral monotherapies has emphasized the need for development of new drugs that act via distinct mechanisms.

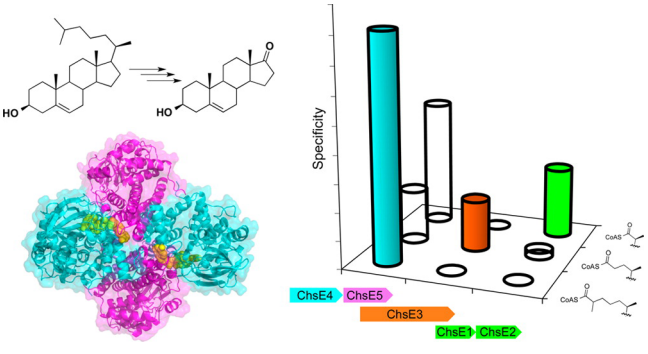
In this issue and on the cover, White et al. (DOI: 10.1021/id500022h) describe the discovery of an antiviral compound that acts on the hemagglutinin protein of influenza virus and blocks virus entry into the host cell. If successfully developed, such a class of inhibitor could be used in conjunction with existing therapeutics to treat influenza virus infection and reduce future rates of antiviral resistance.



FUTURE STRATEGY AGAINST TUBERCULOSIS

Mycobacterium tuberculosis (*Mtb*) infection presents a serious problem for global health. Cholesterol metabolism by *Mtb* is crucial for its survival and virulence, and understanding cholesterol metabolism is important for identifying and developing new antimicrobial drugs.

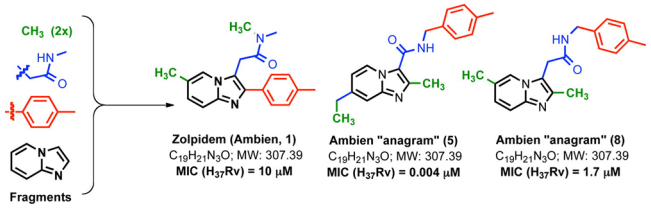
Here, Yang et al. (DOI: 10.1021/id500033m) demonstrate essential cholesterol-metabolizing enzymes' structure and function using key metabolic cholesterol intermediates. Crystal structure shows a unique binding pocket that could provide a strategy for future inhibitor design targeting the cholesterol side-chain metabolism pathway in *Mtb*.



SLEEP AID OR ANTITUBERCULOSIS AGENT?

Zolpidem, better known as the sleep aid Ambien, bears strong structural similarity to imidazo compounds that are promising antituberculosis agents. Zolpidem interacts with the GABA-benzodiazepine receptor to produce its sedative effects in vivo.

In this issue, Moraski et al. (DOI: 10.1021/id500008t) investigated whether zolpidem also has anti-TB properties. Although zolpidem exhibited a reasonable minimum inhibitory concentration, its structural isomers performed better, including against clinically relevant strains of drug-sensitive, multidrug-resistant, and extensively drug-resistant *Mycobacterium tuberculosis*. Further studies to select optimal anti-TB compounds are ongoing and could lead to finally "put TB to rest".



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