

The Mechanisms of Lipid-targeting Antibiotics

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Antimicrobial resistance is a global health threat, calling for new antibiotics. Good candidates could be compounds that target special lipids that only exist in bacterial, but not in human cell membranes. These drugs kill pathogens without detectable resistance, which has generated considerable interest.

Using ssNMR and microscopy, our group has introduced approaches to study lipid-targeting antibiotics across different length-scales in membranes^[1]. Recently, we determined the killing mechanism of teixobactin^[2,3], considered the first new antibiotic in 30 years. We showed that teixobactin kills bacteria by forming supramolecular fibrils that compromises the bacterial membrane. In addition, we show the molecular mechanism of Clovibactin, a new antibiotic from 'unculturable' bacteria^[4].

References:

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