

Hiroshi Ogawara: Possible drugs for the treatment of infectious diseases in the future: Anti-virulence drugs

Abstract: Antibiotic resistance is a global threat that should be urgently resolved. Finding a new antibiotic is one way, whereas the repression of the dissemination of virulent pathogenic bacteria is another. From this point of view, this paper summarizes first the mechanisms of conjugation and transformation, two important processes of horizontal gene transfer, and then discusses the approaches for disarming virulent pathogenic bacteria, that is, anti-virulence factor inhibitors. In contrast to antibiotics, anti-virulence drugs do not impose a high selective pressure on a bacterial population, and repress the dissemination of antibiotic resistance and virulence genes. Disarmed virulence factors make virulent pathogens avirulent bacteria or pathobionts, so that we human will be able to coexist with these disarmed bacteria peacefully.

Keywords: antibiotic resistance, bacterium, virulence factor, antimicrobial, infectious diseases

Journal of Antibiotics. 2020 July 09. <https://doi.org/10.1038/s41429-020-0344-z>