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**Cell biology of microbes and Pharmacology of antimicrobial drugs****explored by Atomic Force Microscopy**

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**Abstract**

Antimicrobial molecules have been used for more than 50 years now and are the basis of modern medicine. No surgery can nowadays be imagined to be performed without antibiotics; dreadful diseases like tuberculosis, leprosis, siphilys, and more broadly all microbial induced diseases, can be cured only through the use of antimicrobial treatments. However, the situation is becoming more and more complex because of the ability of microbes to adapt, develop, acquire, and share mechanisms of resistance to antimicrobial agents. We choose to introduce this review by drawing the panorama of antimicrobial discovery and development, but also of the emergence of microbial resistance. Then we describe how Atomic Force Microscopy (AFM) can be used to provide a better understanding of the mechanisms of action of these drugs at the nanoscale level on microbial interfaces. In

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