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Bacterial Components as Naturally Inspired Nano-Carriers for Drug/Gene Delivery and Immunization: Set the Bugs to Work?

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## Abstract

Drug delivery is a rapidly growing area of research motivated by the nanotechnology revolution, the ideal of personalized medicine, and the desire to reduce the side effects of toxic anti-cancer drugs. Amongst a bewildering array of different nanostructures and nanocarriers, those examples that are fundamentally bio-inspired and derived from natural sources are particularly preferred. Delivery of vaccines is also an active area of research in this field. Bacterial cells and their components that have been used for drug delivery, include the crystalline cell-surface layer known as “S-layer”, bacterial ghosts, bacterial outer membrane vesicles, and bacterial products

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