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A Novel Peptide-mediated Enhanced Drug Delivery across Epithelial Barrier

A bacterial peptide, Listeria adhesion protein (LAP), is leveraged to enhance the efficient oral delivery of various drugs by increasing permeability across the intestinal barrier.

One of the most common practices of drug delivery is by the oral route. However, overcoming the gastrointestinal epithelial barriers is the major challenge for efficient delivery of drugs. Besides the intracellular route or passive diffusion, the paracellular route can be exploited by using a bacterial peptide for enhanced delivery of drugs through the epithelial barrier to reach the underlying lamina propria and submucosal compartment.

Researchers at Purdue University have developed an approach for enhanced delivery of drugs through the intestinal epithelial barrier to reach the underlying propria and submucosal compartment. The use of the Listeria adhesion protein (LAP) enhances permeability through the intestinal barrier. This technology would be suitable for enhanced delivery of a variety of drugs across the mucosal epithelial barrier.

Advantages:

-Enhanced permeability

-Improved efficiency

Potential Applications:

-Drug delivery

-Pharmaceutical companies

Related Publications:

1. Listeria Adhesion Protein Induces Intestinal Epithelial Barrier Dysfunction for Bacterial Translocation

DOI:https://doi.org/10.1016/j.chom.2018.03.004

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Pharmaceuticals/Pharmaceutical Packaging & Delivery Systems

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2.Crossing the Intestinal Barrier via Listeria Adhesion Protein and Internalin A

DOI:https://doi.org/10.1016/j.tim.2018.12.007

TRL: 3

Intellectual Property:

Provisional-Patent, 2017-10-06, United States | Utility Patent, 2018-10-04, United States

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