Tracking Cellular Internalization and Trafficking of Nanomaterials

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Technology description

Background

Understanding how drugs and viruses enter cells is paramount for better drug efficacy and for designing more targeted drugs to combat infection. Currently, traditional molecular biology techniques are used to understand the passage of a molecule from the outside of the cell to the cytoplasm. While these techniques offer a great starting point to understanding key proteins involved in transport, they only provide a snapshot of a specific interaction and miss other biomolecules that are involved in intermediate steps.

Technology Summary

Purdue University researchers have developed a multifunctional reagent to study cellular transport of molecules. The novel reagent will interact with multiple proteins necessary for transport into the cell and the resulting conjugates identified by mass spectrometry. At varying times, cellular proteins can be isolated to identify the proteins the reagent is bound to, giving investigators a better understanding of what is involved in cellular transport.

Application area

Pharmaceuticals
Drug Development
Bioinformatics
Chemical Analysis

Advantages

Information to design more efficacious drugs
Learn more detailed information about cellular transport

Design more targeted drugs to treat infection

Institution

Purdue University

Inventors

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