



The **Realisation** of Research

Small Molecule Carriers: Importing Cargo into Cells

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Description:

Small Molecule Carriers: Importing Cargo into Cells

Available for: Licensing and co-development

Summary

Vectors allowing hydrophilic molecules to gain access to the cell interior are needed to reach new therapeutic targets. Transduction peptides have opened the way to this, but their chemical mimics are of greater interest. Scientists at University College London have developed a series of Small Molecule Carriers (SMoCs) that have many potential applications in research and medicine.

The Technology and its Advantages

Cells tightly regulate whom they allow entry, but it is often useful for research or therapeutic purposes to induce the uptake of bulky proteins or hydrophilic molecules, which are normally denied entry. It has been known for some time that certain short alpha-helical peptides can permeate the cell membrane; however, their application is plagued by high cost and the potential for biodegradation. Professor David Selwood and colleagues at University College London have now overcome these obstacles by designing small molecules based on this alpha-helical structure. These new small molecule carriers efficiently transport dye molecules, proteins, DNA and RNA into several different cell types.

Market Opportunity

A variety of research and therapeutic procedures would benefit from the ability to directly transport various molecules into cells, meaning that a number of market segments are open to this technology. SMoCs can be used to transport and deliver cargo for research or therapeutic applications including RNA inhibition, cell transfection, MRI and in vitro work. Import of proteins and siRNA with retention of function has been demonstrated.

Intellectual Property Status

Three patent families cover the composition of matter and methods of use. These patents cover a several series of small molecule mimics with the potential to deliver a variety of therapeutically useful cargo to a range of intracellular targets.

Further Information

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