Transducible Delivery of siRNAs by dsRNA Binding Domain Fusions to PDT/CPPs

Tech ID: 19541 / UC Case 2006-150-0

TECHNOLOGY DESCRIPTION

Researchers at UCSD have developed a method to deliver siRNA into cells by reversibly masking or neutralizing the charge on the dsRNA using a fusion protein of the TAT delivery peptide and the dsRNA binding domains (DRBDs). The DRBDs, four DRBDs cover the surface of the dsRNA cylinder, bind specifically to dsRNA and mask approximately 16 bp of dsRNA. Also, the DRBDs bind in a sequence independent manner, so that any siRNA will be able to be delivered by this technique. Aggregation of the conjugate does not occur.

Currently, the delivery of siRNA through the cell membrane into the cell is problematic due to the large size and the negative charge. Transfection works, but cannot be done *in vivo*; viral delivery works but presents other problems; liposomes have also shown limited success. The ability to deliver siRNA *in vivo* via protein transduction domains will be a significant advance for the potential treatment of many diseases including cancer, viral infections, genetic diseases, etc.

The inventors have constructed more than ten variations of multiple TATs with multiple DRBDs and have shown that the TAT-DRBDs bind to and neutralize siRNAs in cell culture. Animal studies have not yet been done.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,273,867	09/25/2012	2006-150

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OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Disease: Cancer

RELATED CASES

2006-150-0