

# Intracellular Anticancer Delivery

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## A novel drug delivery mechanism utilizing protein carriers for intracellular drug delivery

Georgia Tech researchers have designed and produced a protein nanocarrier, a drug delivery device, made from proteins capable of carrying any antibody. Antibodies are attached to the assembled protein core to create the nanoscale drug delivery carrier. The protein core is completely degradable and is small relative to the size of the antibodies it carries. It also enables a multitude of antibodies, of the same or different types, to reach and penetrate active cells. This design allows antibodies to effectively reach intracellular target of a variety of diseases in an unprecedented way.

### Summary Bullets

- **Self-assembling:** Forms an organized structure in water at room temperature
- **Nano-scale:** Approximately 35 nm, ideal for intracellular uptake
- **Versatile:** Can be used with any antibody

### Solution Advantages

- **Self-assembling:** Forms an organized structure in water at room temperature
- **Nano-scale:** Approximately 35 nm, ideal for intracellular uptake
- **Versatile:** Can be used with any antibody
- **Novel approach:** Opens up an entire new class of protein drugs that can deliver therapeutics inside cells

### Potential Commercial Applications

- Diseases via intracellular protein targeting
- Anti-cancer

### Background and More Information

There is a significant list of “undruggable” diseases, meaning diseases that are related to intracellular protein interactions that small molecules cannot block. While many antibodies with intracellular targets exist, they can only be used as research tools because the antibodies cannot penetrate live cells. Delivering sufficient amounts of functional antibody inside live cells is a challenge that research has not been able to overcome.

## **Inventors**

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## **IP Status**

<p class="MsoNormal">Patent has issued<o:p></o:p></p>: US11433138

## **Publications**

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## **Images**

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