# CD36-Binding Aptamers for Targeted Drug Delivery

**This technology offers CD36-binding aptamers with various potential applications, including the isolation or depletion of monocytes or macrophages, targeting platelets, and delivering drugs specifically to sites of inflammation or injury.**

### What is the Problem?

Effective drug delivery to specific sites of inflammation or injury remains a significant challenge in medical treatment. Traditional methods often rely on the circulatory system, which can be inefficient, especially in areas with low vascular density or permeability. This inefficiency can lead to suboptimal therapeutic outcomes and increased side effects. In addition, targeting immune cell populations, such as myeloid cells, has recently emerged as a powerful technique in cancer therapy. Myeloid cells, including monocytes and macrophages, play a major role in tumor growth. As a result, there is an opportunity to develop targeted myeloid cell therapies for cancer.

### What is the Solution?

The technology involves the development of DNA aptamers that specifically bind to CD36, a receptor protein on the surface of a variety of immune and non-immune cells including monocytes and macrophages. These CD36-binding aptamers can be conjugated with therapeutic agents and delivered directly to the target cells. By leveraging the natural recruitment of monocytes and macrophages to sites of inflammation, injury, or tumor environments, this approach ensures that the therapeutic agents are delivered precisely where they are needed, enhancing efficacy and reducing systemic side effects.

### What is the Competitive Advantage?

Targeted Delivery: Aptamers specifically bind to CD36, ensuring precise delivery of therapeutic agents to the desired site.

Enhanced Efficacy: By focusing on the natural recruitment process of immune cells, the technology improves the concentration of drugs at the site of injury or inflammation.

Reduced Side Effects: Targeted delivery minimizes the exposure of non-target tissues to the therapeutic agents, reducing potential side effects.

### Technology ID

BDP 8454

### Category

Selection of Available Technologies

Therapeutics/Other


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Versatility: The aptamers can be conjugated with a variety of therapeutic agents, making the technology adaptable to different treatments and conditions.

## Patent Information:

US20230017777A1

## References


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2. Ling, M., Cardle, I. I., Song, K., Yan, A. J., Kacherovsky, N., Jensen, M. C., Pun, S. H.(2023) , https://pmc.ncbi.nlm.nih.gov/articles/PMC11016351/, https://pubs.acs.org/journal/abseba, 9, 5062-5071