# A Nanotherapeutic to Target Disseminated Tumors

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## Technology description

## Summary of Invention

A nanoparticle technology platform with a novel composition of matter has been developed to selectively deliver anti-cancer drugs to disease sites by targeting P-selectin. P-selectin is expressed on activated platelets and endothelial cells in tumor vasculature, and its expression is thought to facilitate tumor metastasis.
These nanoparticles are synthesized using a pH-sensitive bond, which allows for the degradation of the vehicle and subsequent drug release within acidic environments such as tumor sites and endosomes. The nanoparticles and their components are biodegradable and are completely cleared from the body within 48 hours.
A single administration of these nanoparticles can safely and efficiently deliver a normally toxic dosage of chemotherapy agents, leading to significantly improved overall survival of the tumor-bearing mice and dramatically reduced toxicity to normal tissues.

## Market Need

P-selectin is expressed in the tumor-associated vasculatures of numerous cancers, including melanoma as well as bladder, breast, colon, lung, and ovarian cancers. This nanotechnology platform is a safe and efficient tool to deliver cytotoxic agents and other drugs to tumors.

## Application area

Targeted nanoparticle therapy

## Advantages

- Proprietary nanotechnology platform
- First-in-class product with a novel targeting mechanism
- Developed and tested to deliver a variety of chemotherapy agents and targeted drugs
- Effective delivery of high doses of cytotoxic drugs to tumor site(s) with low toxicity to normal tissues

Institution

Memorial Sloan-Kettering Cancer Center

Inventors

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