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Targeted Delivery to the Heart Endothelium

Tech ID: 11237 / UC Case 2008-157-0

ABSTRACT

Targeted delivery of nanoparticles to the heart endothelium with large pay-load potential, applicable to drug/gene delivery.

FULL DESCRIPTION

Ligand-targeted liposomes are increasingly being recognized as an effective strategy to deliver drugs to specific organs; however, few studies have quantified endothelial binding of targeted liposomes. Researchers at the University of California, Davis have discovered that embedding high concentrations of short, linear, arginine-terminated peptides into nanoparticles allows for concentrated binding of the particles selectively to heart endothelium and the vascular endothelium in the heart.

APPLICATIONS

- ▶ Targeted drug delivery vehicles
- ▶ Contrast agents for imaging

FEATURES/BENEFITS

- ▶ No other methods exist currently to deliver drugs or genes specifically to the heart endothelium

RELATED MATERIALS

- ▶ Zhang H, Kusunose J, Kheirloom A, Seo JW, Qi J, Watson KD, Lindfors HA, Ruoslahti E, Sutcliffe JL, and Ferrara KW. 2008. Dynamic imaging of arginine-rich heart-targeted vehicles in a mouse model. *Biomaterials*. 29(12):1976-88. Epub 2008 Feb 6.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,506,928	08/13/2013	2008-157

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [An Effective Anti-Cancer Combination Therapy, with Substantially Reduced Side Effects](#)
- ▶ [Modular Piezoelectric Sensor Array with Beamforming Channels for Ultrasound Imaging](#)

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OTHER INFORMATION

KEYWORDS

cardiovascular system,
cardiac, cardiac
endothelium, heart muscle,
drug delivery, targeted,
nanoparticles,
nanodroplets, imaging

CATEGORIZED AS

- ▶ **Imaging**
 - ▶ Medical
- ▶ **Medical**
 - ▶ Delivery Systems
 - ▶ Disease:
Cardiovascular and
Circulatory System
 - ▶ Imaging

RELATED CASES

2008-157-0

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