

Creating 'leaks' in blood vessels could aid in drug delivery

The endothelial cells that line blood vessels are packed tightly to keep blood inside and flowing, but scientists have discovered it may be possible to selectively open gaps in those barriers just enough to let large molecules through—and then close them again.

Gang Bao, a bioengineer at Rice University, and collaborators at Emory University and the Georgia Institute of Technology report using magnets to help iron-oxide nanoparticles invade endothelial cells both in the lab and in vivo. Then they use the same magnets to make vessels temporarily “leaky.”

leaky blood vessels

Fluorescent iron-oxide nanoparticles glow in endothelial cells. At left, the nanoparticles are evenly distributed among the microtubules that help give the cells their shape. At right, after a magnetic field is applied, the nanoparticles are pulled toward one end of the cells and change their shapes. Credit: Laboratory of Biomolecular Engineering and Nanomedicine/Rice.

“For many diseases, systemic delivery through the blood stream is the only way to deliver molecules to the site,” Bao says...Along with drug molecules, Bao wants to use magnets to deliver nanoparticle-infused stem cells to injured tissues. “Unless you can do direct injection of stem cells, let’s say into the heart, you have to do systemic delivery and you have no control over where they go.”

[Read the full study [here](#)]

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [Could 'leaky' blood vessels deliver drugs?](#)