

Drug Discovery & Development

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By Elizabeth Tolchin

Drug-in-a-Box? 12/15/05

Scientists at Johns Hopkins University, Baltimore, Md., have developed a tiny, self-assembling, three-dimensional metal container—no larger than a speck of dust—that they believe can transport medications and cell therapies to precise areas in the body.

"We're talking about an entirely new encapsulation and delivery device that could lead to a new generation of 'smart pills,'" says David Gracias, PhD, an assistant professor in the Department of Biomolecular and Chemical Engineering in the Whiting School of Engineering at Johns Hopkins.

Created with some of the same techniques used to make microelectronic circuits, the microcontainers are small enough to be injected rather than implanted. Because they're metallic (made of copper and nickel, and coated with a thin layer of gold to prevent toxicity), they can be tracked with MRI as they move through the body, and even guided directly to the site of an illness or injury.

"We think this is great for cell therapy, because it's strong and mechanically and chemically very stable," says Gracias. His lab is now working on a process for remote control of the microcontainer, with the ultimate goal of "on-demand release" of a chemical or compound—something that can't be done with polymer-based delivery systems.

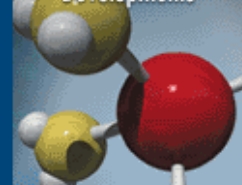
The microcontainers have not yet been tested *in vivo*, but Gracias hopes to begin such testing in the near future. The research appears in the December issue of *Biomedical Microdevices*.

By Gina Shaw

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