Cancer-fighting fountain pen

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A research team at Northwestern University has demonstrated a tool that can precisely deliver tiny doses of drug-carrying nanomaterials to individual cells.

The tool, called the Nanofountain Probe, functions in two different ways: in one mode, the probe acts like a fountain pen, wherein drug-coated nanodiamonds serve as the ink, allowing researchers to create devices by “writing” with it. The second mode functions as a single-cell syringe, permitting direct injection of biomolecules or chemicals into individual cells.

The research was led by Horacio Espinosa, professor of mechanical engineering, and Dean Ho, assistant professor of mechanical and biomedical engineering, both at the McCormick School of Engineering and Applied Science at Northwestern. Their results were recently published online in the scientific journal *Small*.

The probe could be used both as a research tool in the development of next-generation cancer treatments and as a nanomanufacturing tool to build the implantable drug delivery devices that will apply these treatments. The potential of nanomaterials to revolutionize drug delivery is emergent in early trials, which show their ability to moderate the release of highly toxic chemotherapy drugs and other therapeutics. This provides a platform for drug-delivery schemes with reduced side effects and improved targeting.

“This is an exciting development that complements our previous demonstrations of direct patterning of DNA, proteins and nanoparticles,” says Espinosa.

You can read more on this study [here](http://www.journeyingbeyondbreastcancer.com/2009/05/cancer-fighting-fountain-pen.html)
• Breast Cancer Resources
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  • Breast Cancer Sisterhood
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