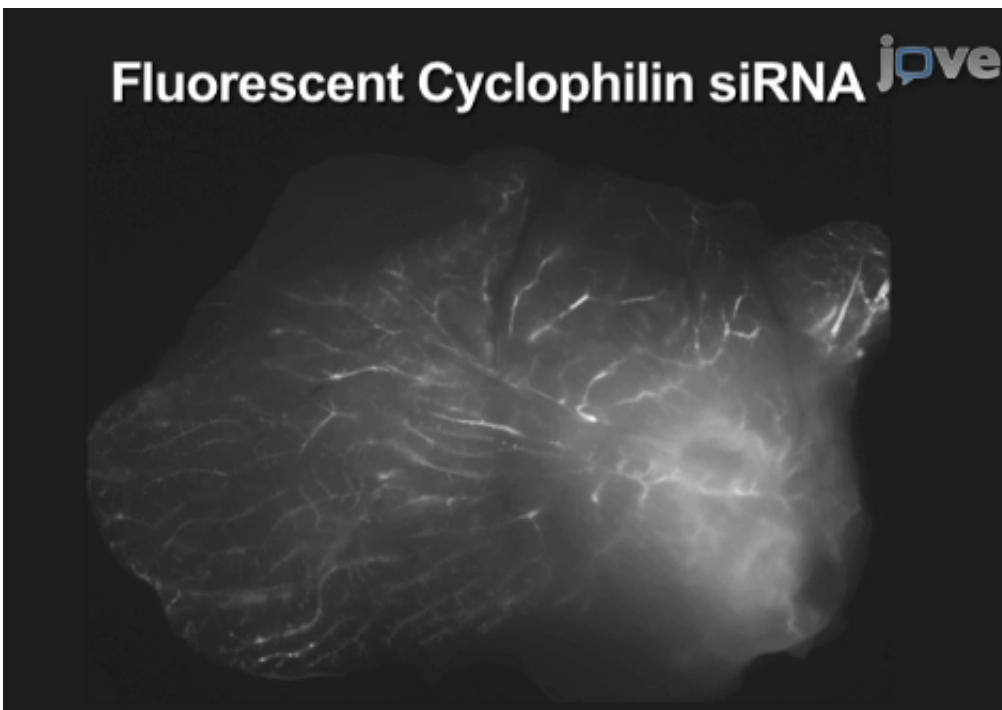


Sparing the body, breast cancer treatment via nipple injection

October 4 2013



This is an example of gene-targeting in a mouse mammary gland using this technique. Here, a fluorescent gene-targeting substance was injected via the nipple duct, and is shown to have targeted an example gene, cyclophilin. Credit: *JoVE*

On October 4, *JoVE*, the *Journal of Visualized Experiments*, will publish a new technique for breast cancer treatment and prevention—injection of therapeutics via the nipple. The procedure, demonstrated on mice, offers direct access to the most common origin of breast cancer, the

milk ducts, and could be used to offer cancer therapy that spares healthy regions of the body.

"Local delivery of therapeutic agents into the breast, through intra-nipple injection, could diminish the side effects typically observed with systemic chemotherapy—where the toxic drugs pass through all of the tissues of the body," said Dr. Silva Krause, one of the researchers behind the experiment, "It also prevents drug breakdown by the liver, for example, which can rapidly reduce effective drug levels."

According to Krause, she and her colleagues have already begun experimentation in applying the method. "The authors have utilized this technique to inject a new nanoparticle-based therapeutic that inhibits a specific gene that drives breast cancer formation," said Krause, "This targeted treatment was shown to prevent cancer progression in mice that spontaneously develop mammary tumors, [and] is currently in review in *Science Translational Medicine*."

In order to better communicate their procedure, Krause and her colleagues decided to publish with *JoVE*. "Because the reader can actually watch the process and see how reagents, instruments, and animals are physically handled over time, the likelihood of reproducing this method in their own labs is greatly enhanced," Krause said. "We believe this will help spread this new technical capability to many labs who are carrying out [breast cancer](#) research."

Provided by The Journal of Visualized Experiments

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