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Shrink-wrapped genes: DNA Direct of S.F. offers consumer service

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A San Francisco company is offering a new service that allows consumers to shrink-wrap their DNA. Just add water and presto: genetic material ready for testing.

DNA Direct, which provides consumer genetic testing for a variety of serious conditions, premiered a new method Tuesday for storing personal DNA called DNA Archive, which allows individuals to keep preserved DNA at room temperature.

"The extracted DNA is sent back to you, and you can put it anywhere you want," said Trish Brown, vice president of clinical affairs for DNA Direct. "If you want to put it in your sock drawer, you can. If you want to put it in a safe deposit box, you can do that as well."

The company worked with **Biomatrix**, a San Diego company that develops ways to stabilize biological samples without having to freeze and maintain them in cold-storage facilities.

Using the new technology, DNA material collected through a cheek swab is sent to a laboratory where it is purified, air-dried and stabilized using a synthetic substance that essentially shrink-wraps the DNA.

Consumers receive a small UV-resistant box with three miniature test tubes containing their dried DNA. The material can later be reconstituted with a few drops of water. The service costs \$175.

A growing number of companies are offering direct-to-consumer genetic testing, from companies like DNA Direct, Navigenics of Redwood City and Google Inc.-backed 23andMe, named for the 23 pairs of chromosomes in the human body. With that growth comes numerous business opportunities, like DNA Direct's archiving service.

"Increasingly, genetic testing is being turned into a fetish, and there's no shortage of companies quick to capitalize on that," said Jesse Reynolds, policy analyst with the Center for Genetics and Society, an Oakland nonprofit advocacy organization.

Reynolds described the usefulness of such a service as limited, but said it would be most helpful to store DNA of people who have passed away because genetic testing can be done at any time on living individuals.

While results from the dearly departed could be interesting and informative, especially as it relates to family heritage or medical history, Reynolds said, that use raises consent issues and other ethical concerns.

"Somebody's father dies and you always wondered, 'Was he really my father? I never really looked like him,' " he said.

That scenario is hardly far-fetched.

Biomatrica's chief executive officer, Judy Muller-Cohn, said she received a call from a woman on Friday - the day she finalized the agreement with DNA Direct.

The woman's male relative had just died, but the family was keeping the body in the morgue hoping to find a way to collect his DNA - for a paternity suit.

"They wanted to bury him, but wanted to wait until they got a sample," Muller-Cohn said. "So here I was Friday morning, giving my condolences to this woman, while at the same time making the arrangements to get his DNA."

The partnership with DNA Direct is the first time Muller-Cohn's 3-year-old company has been involved in a service geared toward consumers, she said. **Biomatrica's** products typically are used by public and private research and academic institutions, the military and crime labs.

Muller-Cohn, a research scientist, said she formed the company to develop what she considers to be a superior way to store samples over the conventional freezing method. "I personally had a freezer breakdown and lost a lot of very, very valuable samples and knew there had to be a better way," she said.

Brown, of DNA Direct, said the shrink-wrap technology is also cheaper than freezing and more reliable than another method, which involves storing blood spots on filter paper.

Freezing costs about \$300, plus as much as \$100 a year for continued storage, and the paper method tends to degrade over time, Brown said. The shrink-wrap method has survived extreme temperatures and artificial aging up to 20 years.

As for potential uses, Brown said people may want to store their DNA for future genetic testing. In addition, they may also want to keep samples of their children's DNA in case of death or kidnapping.

DNA Direct consulted numerous laboratories to ensure they could use material stored with the new technique, she said. The technique is also compatible with current genetic tests, but Brown couldn't vouch for what the future will hold.

"I can't imagine a test that would not be able to use raw DNA that has been stabilized, but you never know," she said.

How it works

- Order a sample collection kit from DNA Direct (www.dnadirect.com).
- Using the kit, take a cheek swab sample; send it to the laboratory in a provided postage-paid envelope.
- The sample is dried using a synthetic material that "shrink -wraps" the DNA to preserve it for future use.
- Customers receive three small test-tube vials containing the samples.
- Store the samples at home or other location, like a bank deposit box.
- When you want to use a sample, it can be reconstituted by genetic testers by adding a few drops of water.
- Price: \$175.