

New toothpaste derived from cocoa extract heralds sweet potential for N.O.

By: Kimberly Quillen

A team of university researchers in Louisiana made the discovery and used their findings to develop a new toothpaste that hits retail shelves around the country this week.

The toothpaste -- called Theodent -- contains no fluoride and relies instead on a proprietary blend of cocoa extract and other minerals to strengthen and harden tooth enamel. Developers say the toothpaste offers an alternative to consumers who worry about consuming fluoride, which has been associated with a number of health conditions, including thyroid disorders and bone disease.

The toothpaste doesn't actually taste like chocolate; it is mint-flavored. But developers hope to expand the Theodent line to include dental floss, mouthwash and, yes, a chocolate-flavored, sugar-free toothpaste for children.

"When kids hear about it, the first thing they ask is, 'Does it taste like chocolate?' And they really want it to," said Arman Sadeghpour, CEO of the company making the toothpaste, Theodent LLC. "If children really want that, we're in a position to give it to them." Theodent will officially launch its toothpaste at a news conference in New Orleans on Wednesday, and the product will be available for sale starting this week online and at Whole Foods stores around the country, including those in the New Orleans area, said Sadeghpour, who worked on the research behind the toothpaste as part of his doctoral research at Tulane University.

Theodent is housed in the 7-month-old New Orleans BioInnovation Center, a \$47 million business incubator that is focused on developing a local bioscience industry centered on university research. The firm is one of the first tenants in the center to convert a scientific discovery into a commercial product. Aaron Miscenich, president of the New Orleans BioInnovation Center,



We decided out of principle that we would absolutely 100 percent keep the technology here in Louisiana, says Theodent CEO Arman Sadeghpour, left, who works with colleague Dr. Tetsuo Nakamoto in their offices in the New Orleans BioInnovation Center on Canal Street.

said Theodent's success in bringing a new toothpaste product onto the market will bolster efforts to develop the local bioscience industry.

"You look at some of the historical doubt about our (city's) ability to grow and attract these companies," Miscenich said. "(Theodent) has basically been able to show that we can do this here." Rooting project in Louisiana Sadeghpour acknowledges that the research team behind Theodent considered setting up the business elsewhere.

"We looked at California because California is, as usual, a very early adopter of new technology and particularly interested in health and beauty," he said.

But Sadeghpour has watched the brain drain that has occurred in Louisiana as promising university graduates and newly developed technologies migrate out of state.

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Theodent, Sadeghpour and his partners decided, would be different.

"We decided out of principle that we would absolutely 100 percent keep the technology here. This needs to be retained in the state of Louisiana, and the state has done an amazing job of building a home for us, which is the Bio-Innovation Center. I think we made the right decision," Sadeghpour said. "I think biotechnology is going to be a burgeoning part of the economy here."

The academic research behind Theodent dates back to the 1980s, when Tetsuo Nakamoto, now a co-founder of Theodent and a professor emeritus at the LSU Health Sciences Center in New Orleans, began studying the effects of nutritional ingredients on pre-natal teeth. Nakamoto, with the help of University of New Orleans researchers, found that a cocoa extract was beneficial in fighting cavities.

Nakamoto said he knew he had made a significant discovery, but the find was not widely recognized until Sadeghpour took the research a step further as part of his doctoral thesis at Tulane, testing the finding on human teeth and making a head-to-head comparison between the abilities of cocoa extract and fluoride to strengthen tooth enamel.

The research confirmed Nakamoto's earlier discovery: that cocoa extract strengthens and enlarges the crystals that make up the tooth, resulting in a more robust enamel. Fluoride, on the other hand, strengthens teeth by adhering to and incorporating itself into the tooth.

The interest generated in 2007 by Sadeghpour's additional study prompted the researchers to work toward commercializing their find. Sadeghpour and Nakamoto, along with University of New Orleans professor William Simmons and Tulane School of Medicine assistant professor Joseph Fuselier, founded Theodent LLC.

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Theodent toothpaste will sell in 3.4-ounce tubes for \$9.99. The company hopes to secure financing so it can expand its product line.

They developed a proprietary blend of cocoa extract and other minerals called Rennou, which is the active ingredient in the toothpaste.

ORCHESTRATING THE PRODUCT
Converting years of research into a marketable product had its challenges.

Though the company operates out of the BioInnovation Center, Theodent contracted with a tube manufacturer in New Jersey, a box manufacturer in Washington state, and an FDA-inspected tube-filling facility in Idaho.

"Bringing the three of those things together was no small feat," Sadeghpour said. "The biggest pain for me has been working on the product itself and the number of iterations you go through with language and showing it to people and really refining the product to its final form."

Miscenich, of the BioInnovation Center, said management expertise -- including the oversight of production, distribution and marketing -- is often one of the more challenging aspects of converting academic research into a commercially viable product.

"We've always have this fantastic research base. And since (Hurricane) Katrina, we've had a surge in capital coming through the city," he said. "But the management expertise is one of the more difficult pieces."

Miscenich also said it's not unusual for a company like Theodent to rely on out-of-state manufacturing and testing facilities.

"We have a lot of device companies and a lot of drug companies. A lot of the time, most of that work has to be done out of state," he said. "That's too bad. That's one of the pieces

that we need to start working on. We need to put that piece of infrastructure in place."

Sadeghpour agrees.

"Our ultimate goal, though, of course is to bring the manufacturing and all of that here. But to build an FDA-inspected and registered facility is very difficult, and it's not something that can happen overnight."

'A GREAT SUCCESS STORY'

Sadeghpour said Theodent is raising additional financing so it can expand its product line. Theodent has been approved by Louisiana Economic Development for the Angel Investor Tax Credit Program in 2012. The program, which had been dormant since 2009 but was restarted with a bill in the 2011 legislative session, grants investors in startup companies a tax break of up to 35 percent of the money they invest.

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State Secretary of Economic Development Stephen Moret said the goal of the tax credit program is to increase the amount of early stage risk capital that is available in Louisiana so that companies like Theodent won't have to leave the state to obtain financing.

Retaining more of those technology startups, he said, strengthens the state's economy.

"This kind of company, not only do you get great new jobs and economic activity, but it also helps to diversify the economy into new growth areas," Moret said.

"It's just become such a great success story in New Orleans," Moret said. "To me, one of the most positive things that's happened in our state since (Hurricane) Katrina is this spark of entrepreneurship that has taken hold and is attracting cap-

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ital and entrepreneurs and new business formation. It's a really exciting development and one that we want to support as much as we can at the state level."

Miscenich said that in addition to the entrepreneurial momentum, awareness is growing about the value of the research being done in south Louisiana and the importance of developing it locally.

"This is world-class research that's either been sitting there or has been licensed away," he said. The work that Theodent and other tenants in the center are doing is "meaningful to the economy and the future of the city."

WHOLE FOODS SIGNS ON

Sadeghpour said Theodent will be marketed broadly to educated consumers.

"Trend setters, tastemakers, people who really are concerned about their health," said Sadeghpour, who has been using the toothpaste for a couple of months. "Not just people who are concerned about fluoride."

He thinks the chocolate-flavored toothpaste for children, once it rolls out, will be a hit with parents because it will help kids get excited about brushing their teeth.

In addition to stores in New Orleans and Baton Rouge, Whole Foods will sell the toothpaste in New York, New Jersey, and in a number of markets along the West Coast, he said.

"As a company, we are always excited to offer innovative body and dental care products to our guests that meet and exceed our quality standards," said Susan Oelker, who coordinates sales of body products for Whole Foods' Southwest Region. "Whole Foods Market Southwest is proud to support local Louisiana vendor Theodent in the debut of their product line."

Sadeghpour said Whole Foods has exclusive rights to sell the toothpaste for 90 days, but other retailers have also expressed interest in carrying Theodent after that period of exclusivity expires.

"I think the distribution will quickly expand," he said.

DEEMED SAFE TO INGEST

Sadeghpour said the Food and Drug Administration has awarded a 'generally regarded as safe' designation to Theodent that means the product is considered safe by experts for ingestion.

He also said that this year, Theodent plans to seek the American Dental Association's Seal of Approval, a widely recognized symbol of a dental product's safety and effectiveness. Theo-

dent has not previously sought the seal because it was unable to share information about its product while patent applications were pending. The company has been awarded two patents and has a third pending.

Theodent toothpaste will sell in 3.4-ounce tubes for \$9.99.

"We are really excited," Theodent co-founder Nakamoto said. "I think we have done a great thing for the well-being of the human race."