

Sugar-based, bio-inspired surfactants hold promises from cosmetics to oil spill cleanups

March 13 2015



GlycoSurf team member Cliff Coss, Ph.D. works with the company's test reactor at the UA Tech Park. Credit: Balfour Walker Photography

University of Arizona startup company GlycoSurf has finalized an

exclusive license agreement for a new chemical synthesis technology, which was created at the University of Arizona.

Prominent UA researchers Jeanne E. Pemberton and Robin Polt, both with the UA College of Science, Department of Chemistry and Biochemistry, along with Raina M. Maier of the UA College of Agriculture and Life Sciences, Department of Soil, Water and Environmental Science, and UA researcher Cliff Coss, originally developed the technology through the course of their research at the University, and it is now poised to enter the marketplace.

The technology involves a unique chemical synthesis of families of environmentally-friendly surfactants - also known as biosurfactants - which are non-toxic and biodegradable and used as "green" replacements for petroleum-based surfactants. Surfactants and biosurfactants are used in numerous industries including cosmetics and personal care products, as well as in environmental applications such as oil spill clean-ups.

In addition to signing the exclusive license for the technology, GlycoSurf has hired Chett Boxley, Ph.D., MBA, as its CEO to lead the company forward.

"Initially, we're going to focus on the cosmeceutical space," Boxley says. "That includes products like anti-aging creams and sunscreens."

Biosurfactants produced today are generally labor-intensive, very expensive, and low in purity, according to the GlycoSurf team.

"We produce sugar-based, bio-inspired surfactants, which are more than 95 percent pure (often 99 percent pure), yet our process is significantly more cost-effective and scalable for large production volumes than current methods," he says.

The GlycoSurf team worked with the UA's Tech Launch Arizona to bring their product to market. TLA is dedicated to creating social and economic impact by bringing the inventions of UA researchers, students and scientists from the laboratory to the market.

Beginning in 2013, the GlycoSurf researchers worked with TLA's technology transfer team on the disclosure and patenting of their invention. From there, the product strategy was developed using proof-of-concept funding to prepare the early-stage technology for market. Most recently, TLA has also provided business intelligence to GlycoSurf to help further hone the company's strategy.

Finally, GlycoSurf needed a lab for its 7-foot reactor to test and prove its manufacturing process. For that, the team brought their operations to the UA Tech Park, operated by Tech Parks Arizona, also a unit of TLA. There, they set up a space where they were not only able to use the UA Tech Park's customized laboratory space to develop their manufacturing process, but also take advantage of services at Arizona Center for Innovation, an incubator located at the UA Tech Park, to help develop their business strategy even further. The company has since graduated from the incubator program.

GlycoSurf researcher and founder Pemberton's enthusiasm for the venture and for TLA is palpable: "Given the worldwide push for greener alternatives for the broad surfactant market, we are truly excited by the commercial potential of our platform technology for producing glycolipid surfactants. Although it probably goes without saying, TLA has been instrumental in helping us move this technology forward toward commercialization. They're a tremendous resource at the UA. We wouldn't be as far along as we are if it hadn't been for their help."

"GlycoSurf is a compelling new company with a strong team that will be commercializing an exciting technology," says David Allen, vice

president of Tech Launch Arizona. "It has been a wonderful experience for TLA people and resources to work with this team and it is a shining example of value TLA provides to technologies created by UA's outstanding researchers."

In 2008, the world produced 13 million tons of surfactants. A recent research study indicates that by 2018, the global market is expected to generate revenues of more than \$41 billion, then continue to grow by 4.5 percent each year. Biosurfactants represent a huge growth opportunity within the larger surfactants market, and GlycoSurf is poised to capitalize on this opportunity with the help of the UA and TLA.

Provided by University of Arizona

Citation: Sugar-based, bio-inspired surfactants hold promises from cosmetics to oil spill cleanups (2015, March 13) retrieved 26 April 2024 from <https://phys.org/news/2015-03-sugar-based-bio-inspired-surfactants-cosmetics-oil.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.