

NovoSome: Forget injections, just take a pill!

NovoSome

Problem and our Solution

Getting an injection is a very unpleasant experience – especially for children and also for people with a chronic disease (e.g. diabetes), who have to get an injection several times a day.

Most pharmaceuticals are not resistant to the environment in the gastro intestinal tract (acid and bile salts) and the residence time in the colon is often too short for the drug to get absorbed properly. Thus many drugs cannot be administered orally. Both problems can be overcome by encapsulation of the pharmaceuticals in so called Archaeosomes. There are several *in vivo* studies out there, that show how promising the technology is, but there is no product on the market yet, as the building blocks for encapsulating the pharmaceuticals are currently not available in sufficient quantity and quality.

We developed a novel production process for those substances, which are proven to allow oral delivery of drugs and that currently have to be administered via injections (insulin, antibiotics, etc.) and already submitted a patent application for this unique production process.

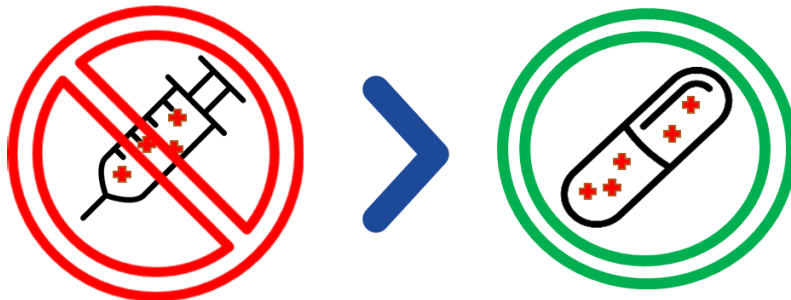


Figure 1: Our vision is to replace 20% of all injections by tablets

Current status

We recently got funding which will allow us to further push our technology and to optimize and upscale our production process in order to get to a minimal viable product. More information can be found here

<https://www.ffg.at/presse/wissenschaftsministerin-rauskala-mit-innovativen-ideen-erfolgreich-richtung-markt>



Figure 2: Besuch von Frau Minister Rauskala (von links nach rechts): Ministerin Rauskala, FFG-GF Egerth, Rektorin Seidler, **Oliver Spadiut (Host)** und die Fellows **Julian Quehenberger**, Martin Miltner und Angela Miltner, Copyright: Matthias Heisler

As we are using archea for the production of our product, we are currently optimizing the bioreactor cultivations as well as the upscale.

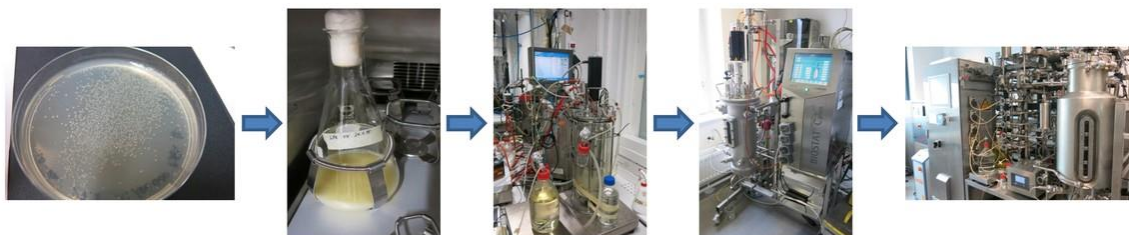


Figure 3: From strain to an industrial bioprocess: agar plate, shake flask, 5l Fermenter, 15l Fermenter, 60l Fermenter (from left to right)

After harvesting the cells, we need to extract our target product from the cells, which we will do by chemical extraction.

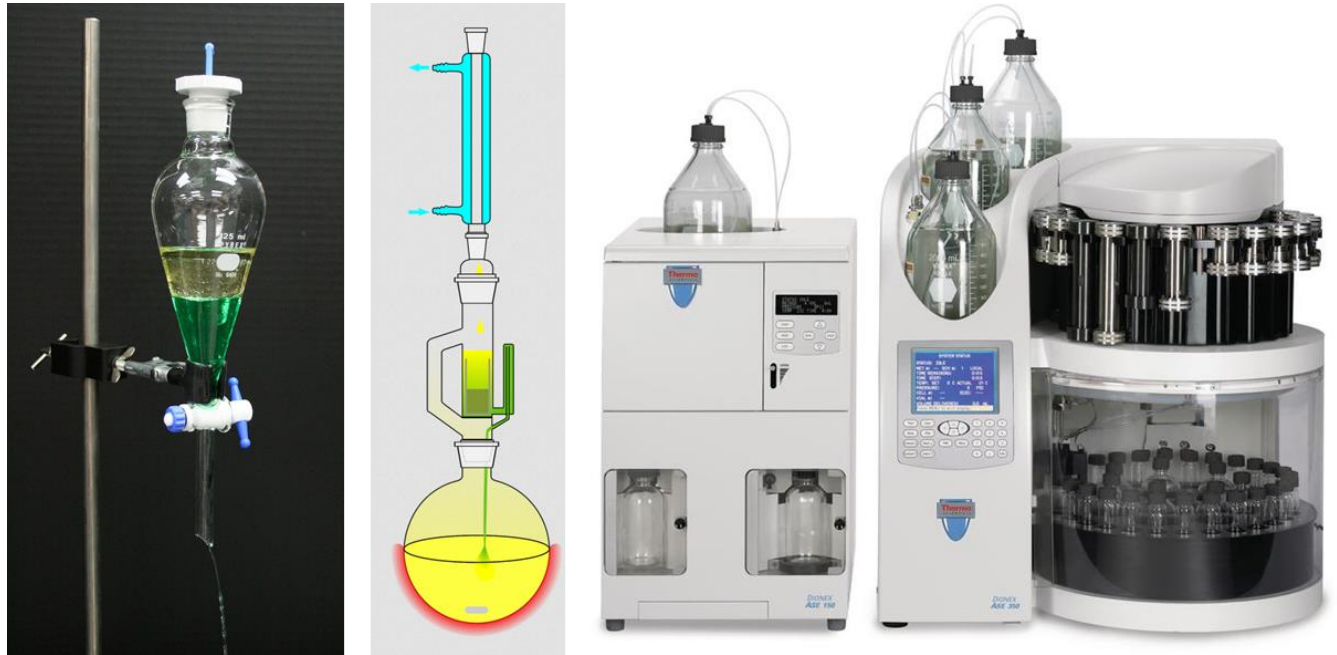


Figure 4: Extraction by separating funnel, Soxhlet extractor and Accelerated Solvent Extraction (from left to right)

Wanted!

We are looking for motivated students who want to do a bachelor thesis, master thesis or an internship. You can find more information [here!](#)

Contact

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