TRINITY

laboratory advances

After redistribution of the tasks, we finally succeeded in constructing a plasmid for S. elongatus containing the genes sps and Plac, which after integration into S. elongatus provide us with a fructose and glucose exporting strain that no longer needs to be induced by IPTG and NaCl. Unfortunately, some analytical methods such as DNA assay or Ysi 2590 sugar detection have shown us that the S. elongatus strain of Pamela Silver, which already has glf and inva for sugar segregation, does not export sugar. After a short consultation with Dr. Silver we came to the conclusion that the transporter glf in her strain is relatively unstable and therefore possibly defective in our culture. We are now working flat out to find a solution to this problem.

We have already made some progress in our quorum sensing system. We have already been able to create many of the necessary gene constructs using GoldenGate cloning. Since we use three different natural quorum sensing mechanisms in this system, this level has the most number of genes to amplify. Our team members are working on these constructs in a hurry and are already showing very good results.

The auxotropy system is sometimes also making great progress. The lysC gene was successfully secured in a vector and we are confident that the final plasmid will be ready in mid-September. Many problems have occurred during the work with Leu2 for a long time. In the middle of the month we found the cause: unexplainable contamination of the fragments. We will now create new fragments and then repeat our experiments. We estimate that the Leu2 will be available in its final plasmid at the end of September or beginning of October.

The Nutrient System has many genes for the conversion of melamine to ammonia. For this reason, we decided at the beginning to divide the genes into two plasmids. However, we currently doubt that we will be able to complete both plasmids in time due to the large number of genes, as there are always problems in amplifying the required genes from genomic DNA. We have therefore considered using biuret instead of melamine as the starting material for ammonia synthesis. This saves us the amplification of some genes and could be completed in time. This idea is currently the subject of much debate.
Due to numerous problems in amplification, the ptxD gene was ordered for the S. cerevisiae plasmid, so that cloning can continue soon. The plasmid should be cloned by the end of September at the latest.

outreach

An event is currently being planned that will focus on the education of synthetic biology. We want to give refugees who take language courses or take part in the language buddy program of the HHU the opportunity to inform themselves about synthetic life sciences, the iGEM competition, our project and the study of natural sciences. We want to show them how great science can be and how exciting it is to explore new things.

The well-known criminal biologist Mark Benecke visited our team on 27.08.18. When we heard his very interesting speech at the March for Science in the middle of the year, we were all aware that we wanted to talk to this very special and very committed man. With coffee and cake we could ask him all questions around the topics criminal biology, public relations and dissemination of knowledge. He amazed us all very much and captivated us with his relaxed and amusing manner. We will now try to put his ideas and suggestions into practice in order to reach the public even better and to carry our scientific work even further out into the world.

In mid-September some members of our team will set off for Krefeld to talk to passers-by in front of a well-known supermarket chain about the areas of application of our co-culture toolbox. Our goal is to capture the moods and opinions about our project in order to be able to adapt and improve it afterwards.

As always, we are very grateful for your support and are always looking forward to new suggestions, ideas and criticism!

The iGEM Team Düsseldorf 2018