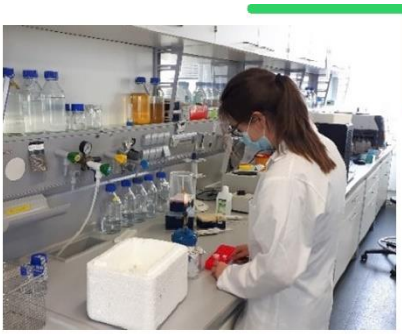
Newsletter

Lab Work

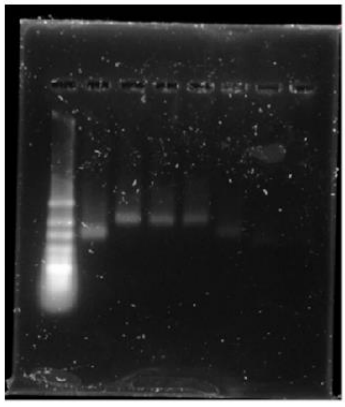


After some intense weeks of groundwork we finally got started in the laboratory!

Beforehand we got helpful lab coachings with multiple experts and professors, tried to think everything through, prepared protocols but nevertheless we knew that the real challenges would arise in practice.

Full of enthusiasm and to be completely honest a bit of unease (since some of us were not super experienced in the lab) we began working in Schwaneberg lab where we tried to analyse the characteristics of our enzyme, the terminal transferase. We did our first TdT tailing reaction by adding the enzyme, the cofactor Co^{2+}, a primer as well as one type of nucleotide (to avoid secondary structures), but unfortunately, we did not see any results when running an agarose gel electrophoresis.

Soon we discovered that our primers were diluted incorrectly, and the real concentration was simply too low for the tailing reactions.



However, we decided to first get our analytics straight. We experimented with different ladders, dyes, and voltages, tried agarose as well as polyacrylamide gels and finally found settings that work best for us. At the same time, we arranged our workspace in iAMB.

The highlight of the week was when our first TdT tailing reaction succeeded and we finally were able to see beautiful bands on a gel!

Looking back on last month we made (after a somewhat bumpy start) good progress with our experiments. Big thank you to all lab workers in Schwaneberg lab for helping us out with everything.

IT and Wiki

The IT and Wiki subgroup is probably one of the most important ones in the iGEM contest. Our Wiki is the one and only thing the judges will look at – it has to be perfect. In the last four weeks we reworked the iGEM RWTH website to update the team members and change the colour scheme. At the moment we develop the ternary coding, which should translate Data into DNA.

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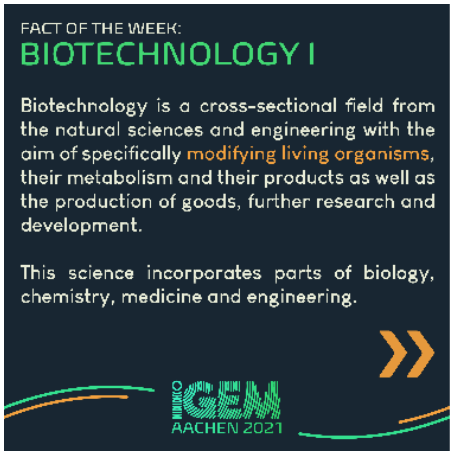
Social Media

On social media we have revealed our project, we introduce our Team members, connect to other iGEM Teams and give insights from the lab. You should definitely check out our Instagram where we post a "Fact of the week" on different interesting biological topics.



Modelling

The members of the modelling team are currently practicing in different modelling programs like GROMACS and Chimera. In a few weeks they should be ready to model a simple TdT reaction. More exciting content to come!

Hardware

Being a part of a technical University, we set challenging goals for our hardware. The hardware should simplify the enzymatic DNA synthesis reaction. So far, we identified which materials, light source, and laser we need and are still working on a detailed concept. Soon we will talk to George M. Church, an expert from Harvard who is much likely to help us in our building process.

Human Practices

The human practices subgroup is all about connecting to other people about our common topic: synthetic biology. In the past few weeks, we consulted experts concerning Nanopore sequencing, Capillary electrophoresis, and other analytical methods we will need in the lab. We started collaborating with other iGEM Teams like Maastricht, Eindhoven and Düsseldorf to find common ground.

Design

The design subgroup creates the image of our team. Our work began with designing a style guide, including a color scheme and fonts. After that, designed logos for our team and the project, helped to design various resources, and started to work on our t-shirts and merchandise for our sponsors.

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