REGISTRY OF STANDARD BIOLOGICAL PARTS

June 13, 2008
iGEM Newsletter Volume 1

Hello iGEM students and instructors,

We hope your summer is off to a great start. We have enjoyed hearing from you in response to our first status check email of this year's iGEM season. Hopefully every primary contact received this email. Keep in mind that if at any point you have a question or concern, you can always reach us at hq@igem.org.

We have been checking out all of the work on the iGEM wiki and have enjoyed watching the team activity ramp up as the summer proceeds. If you have not already done so, please do visit your fellow teams' wikis. It is always interesting and helpful to see what others are working on, how they are doing their experimentation, and what people are doing with their team wiki. You might learn a lot!

In this shipment you will find two additional filter paper sets that should be stored in your green DNA distribution binders. The first addition to the distribution is Jason Kelly's part measuring kit. This kit has 2 sheets and will lead you step-by-step through the process of inserting a promoter and measuring promoter activity in Standard Promoter Units (SPUs). You can find more information for Jason's measurement kit by checking out the Measurement page on the Registry. The second addition in the distribution is Barry Canton's data sheet for BBa_F2620. Some of you may be familiar with Barry's extensive work on this part. It is the best example of a part that has been greatly characterized, measured, and tested- over the course of a couple of years. Both of these sheets have the physical DNA spotted directly on them. Thank you to Kim de Mora, Jason Kelly, and Barry Canton for all their work on these additions to the distribution.

We would also like to take this opportunity to update you on what has been happening on our end here at iGEM Headquarters. This is the first installment of what will become a regular newsletter as a way for us to communicate with you what is happening in our world.

After sending out the DNA distribution last month, we have been getting reports that some of you are having trouble transforming the DNA spotted on the filter paper grids. While we have heard of some successes with the transformation of the parts, we understand that it can be frustrating when it doesn't work. This is why we have recently put even more effort into improving the DNA recovery/transformation process. Because of the amount of testing on the transformation protocol and the confidence that we have in the protocol, we urge you to follow the transformation instructions included with your binder.

The recovery of plasmids from spotted samples requires good transformation efficiency.

Chemically competent cells from Invitrogen (Top10 or Mach1) will work well, as will cells made with our protocol (can be found on the distribution information page on the Registry). In any case, if you are having trouble reliably transforming spotted DNA, please test your competent cell efficiency. Instructions for doing so are included on the competent cell protocol page. The 10 pg/ul plasmid DNA sample can be prepared by diluting DNA into TE. We dilute NEB pUC19 DNA (NEB product N3401S) into TE for our competence tests. Efficiency of 10^8 cfu/ug is a good target. Electroporation could also be used, although we do not routinely test using this technique. Some groups have reported trouble transforming into DH5 alpha strains, although we would not anticipate any difficulty with high efficiency cells of this strain. BL21 strains will likely not transform with sufficient efficiency to directly recover plasmids from the distribution.

What we have realized, though, is that there is still a lot of room for improvement in the area of DNA recovery from the filter paper spots.

We have come up with a simple addition to the DNA recovery section of the protocol. After soaking the spots in 5ul TE 10:1 (pH 8.0), add a centrifugation step and spin the tube, containing both the spot of DNA and the TE, at 15,000 x g for 3 minutes. We believe that this draws a larger quantity of the spotted DNA off of the filter paper than would be recovered by just soaking the spot in TE.

You can find more information about this technique and any further experimentation that we do relating to DNA recovery on the Registry website at:

http://partsregistry.org/Help:Spring_2008_DNA-distribution.

Try it out and let us know how it works for you!

The main goal of this newsletter is to open up communication between iGEM teams (both instructors AND students) and us here at iGEM Headquarters. In past iGEM seasons there was very little interaction between us during the time between the Teachers' Workshops in the Spring and the Jamboree in the Fall. We think that it is time to change that – we want to know what problems/concerns/successes you have and we want to keep you informed of what we do here in Cambridge, MA.

Please help us by taking the time to read this letter and pass it along to all the members of your team. Again, you can always contact us by emailing HQ@igem.org or calling us at +1.617.258.5244.

Thank you,

iGEM Headquarters