2010 iGEM workshop

2010 6. 26. Sat

1.
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Synthetic biology based on parts.

Major societal problems
-Energy & materials
-Environmental….

Chromosome->mega bytes memory

Powerful tools of engineering design
Abstraction
Hierarchy
Modularity
Standardization
Isolation, separation of concerns
Flexibility-modify it to solve the problem.

Biobricks : standard biological parts

Snap together Lego block assembly -> Mechanical compatibility
Output of on component suitable as input of next component -> functional compatibility

- ➔ Input sensors,
- ➔ computational devices,

example : pSB1A3
pSB "synthetic Biology"
1 -> high copy number origin
A -> Ampicillin resistana
3 -> Biobrick cloning site with up and downstream terminators

▶Available antibiotics

- ➔ A ampicillin (orange)
- ➔ C chloramphencol (green)
- ➔ K kanamycin (red)

➔ T tetracycline (yellow)

2.
How many assembly rounds can the team get done?
Don't try and do everything
How quick are the experiments?
sign the project with parallel tracks

Describe your project on your team wiki

Superpart Search
A: available
Star shape: quality confirmed

<DNA distributions>
Storage - Kit plates -20
- Plasmid backbones : 4 or lower
Usage : don't remove the foil cover!
Not enough DNA – be careful!
Count and make sure you're using the right ones.
Transform 에 좋게 들어있다 but not assembly
Their own component cell 이 들어있다. (잘만들어진거임..)
2. Linearized plasmid backbone
-ready to cut : EcoR1, Pst1
-pSB1C3 (standard plasmid for shipping) –quality control 에도 좋고 그러니 여기에 집어넣어 보낼 것
3. Finding a part : browse
-12 source plate, 3 kit plate
-icon format 으로 random parts 볼 수 있다. (upper right of the registry site)
-kit plate 에 있으면 Available (없으면 신청하면 박테리아에 넣어서 보내줌)
-DNA sent : 신청하면 받을 수 있다. 시간이 좀 걸릴 뿐. Transform 해야하므로.
-DNA planning : 보내줄 수 없어 우리한테 없으니까.
-그 아래 Get this part 누르면 어디에 들어있는지 알려줌.
-video instruction : transform 하는거랑 어떻게 part 찾는지 비디오 있다.
-A/A : resistance and expected to grow in amphicillin.
*Quality control
- 3parts
- Gel : 2 fragments – 2 lines

- 뒤에 세 부분은 헤드쿼터들이 검사하고 쓴거임. Quality =length : OK면 넣을 수 있음.
- Sequence analysis : conformed

Tutorial : log in to registry and go for Help : team experience tutorial (resources)

To get sequence of a gene : go to NCBI and look at the display form : FASTA
Get the sequence and go to (reverse complement) http://www.bioinformatics.org/sms/rev_comp.html and you will get the complement sequence and then register it to the part.