

Design and Assembly of Synthetic Transcriptional Regulators for Application in *Escherichia coli* and *Bacillus subtilis*

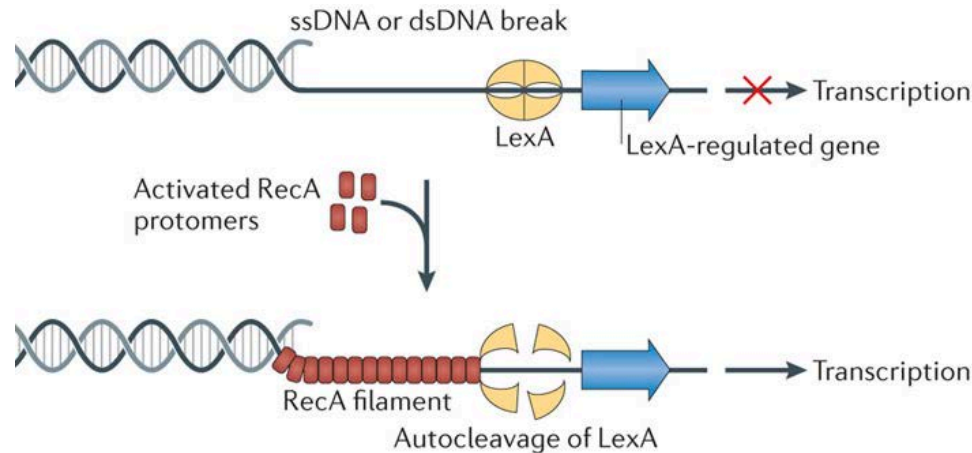
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Summary of Research Project

- ▶ LexA is a transcriptional regulator typically involved in the SOS response of a cell



Nature Reviews | Microbiology

- ▶ Reappropriation of the LexA transcriptional mechanism would allow for transcriptional regulation of chosen genes
 - ▶ Synthetic LexA-based transcriptional regulators were synthesized with various C-terminal domains to determine viability for regulating expression of genes of interest

New Techniques Acquired

- ▶ Polymerase chain reaction
- ▶ Gibson assembly
- ▶ Bacterial culture
- ▶ DNA integration via electrophoresis
- ▶ Utilization of BioTAG, ExPASy
- ▶ DNA sequencing

A Typical Day in Lab



Impact of Research Conducted

- ▶ If successful, our research will allow for the regulation of expression of a plethora of genes by bacterial agents
 - ▶ This means we can essentially use bacteria to produce/express certain proteins, which we can then isolate by lysing the bacterial and purifying the protein
- ▶ The research conducted this summer will be continued by a current postdoctoral candidate in the lab

When Scientists Have Too Much Time...



Life Outside of Lab

You can't keep people in the lab all the time (if only because it means you would get horrible results), so we had plenty of time to explore Montpellier, among other places.

After work meant lots of ice cream, biking, beaches, and watching street performers in the city center. Every Thursday, a couple of the lab members would go to a nearby basketball court and play some friendly (but sometimes intense) games of basketball. Weekends were filled with travel to different cities (and countries!).

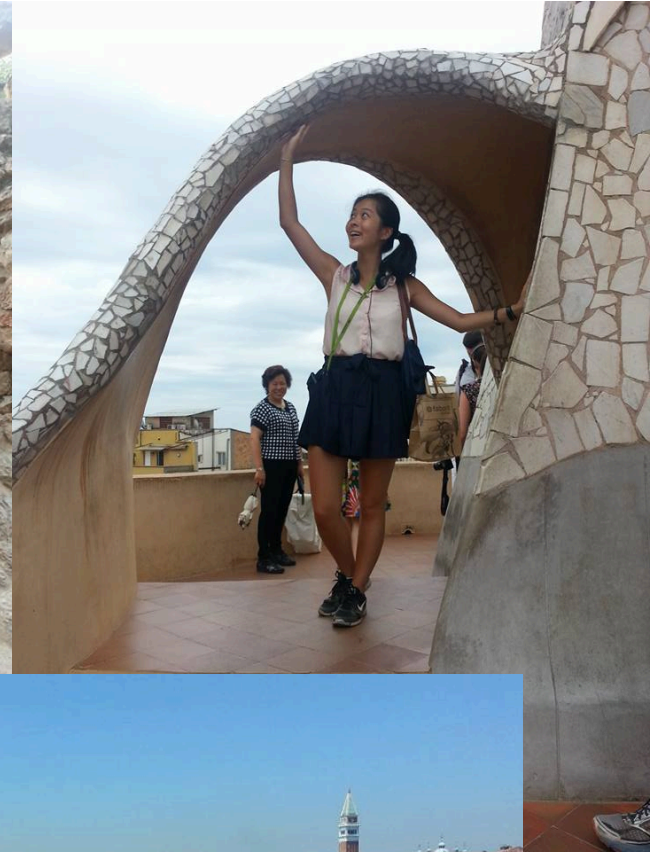


A digital scoreboard for a basketball game. The title is "Piste 8". The table shows scores for Erica, Andreea, and Hung-Ju. Erica has a score of 155, Andreea 142, and Hung-Ju 142. The total score for the team is 439. The word "veuillez" is written in red at the bottom right.

	Hdp	G1	G2	Score	HdpT	TOT
Erica	0	77	78	155	0	155
Andreea	0	78	64	142	0	142
Hung- Ju	0	56	86	142	0	142
Totaux equipes		211	228	439		
handicap equipe		0	0			
HDCP Total		211	228			439

veuillez

Tigers and Travels



Reflections on the Summer

I can't help but be so amazingly grateful for all of the opportunities and adventures I've had this summer. To everyone at CBS, thanks for making this internship such an awesome experience. It wasn't the research I was expecting to do, nor the place I was expecting to be, but nevertheless, I couldn't have asked for a better time.

Beyond the labwork, I've navigated countless subways, walked through rain to try to see fireworks, almost gotten robbed, eaten ice cream while watching the Eiffel Tower glitter, seen more churches and palaces and priceless art than I can describe, been fined for buying the wrong metro ticket, had Michelin star-worthy (and just Michelin starred) meals, and a whole slew of other adventures and misadventures.

It's truly been une été incroyable. The amount of independence and freedom I've experienced and the generosity I've seen has really made this summer unforgettable. France, you've captured my heart with your cafés and croissants - I hope to be back soon enough!

