Characterization

[Aim & Hypothesis]
We want to draw BBa_E0034 and BBa_E0032 those two parts’ fluorescence-OD600 curve and ensure their fluorescence stabilization. According to the registry, BBa_E0034 should be more stable than BBa_E0032. So our hypothesis is BBa_E0034 is more stable than BBa_E0032.

[Protocols]
1. Use PCR to get the gene fragments.
2. Connect the two fragments separately into the plasmid vector and transfer them to E. coli.
3. Pre-experiment.
   A. culture them in 5 mL LB solution at 37 ºC and wrap the culture tube with tin paper to avoid light influence.
   B. Use fluorescence microscopy to observe fluorescence signal feedback after overnight incubation to determine its expression.
4. Use primitive E. coli (DH5α) as negative control. Culture the E. coli in 5 mL LB solution in three tubes at 37 ºC (with tin paper as light barrier).
5. Measure the ABS and fluorescence of bacteria every 1 hour. The first 3 hours were not diluted. Diluted 5 times from the fourth time. Measure 10 times in total.
6. Measuring the coefficients of OD600 and ABS
7. Draw the fluorescence-OD600 curve and compare the stability of the two fluorescent proteins.