

1. Create an organism that is kan resistant (strong/weak)
2. Use BioBricks to design an E. Coli which smells weakly of flowers, and is kan resistant
3. Create a protein that will give "Gain" detergent a run for its money, making it smell amazing!
4. Create a weakly toxic organism.
5. Find a sequence to cleave proteins to further the life of HIV. The protein sequence is only compatible with a RFP promoter that is paired to an Anderson RBS. To terminate the coding rnpB terminator is used.
6. Create a protein that is involved in cell lysis and death.

**Remember not all genes can work in only E.coli, if the organism being used is different, let us know!*

PARTS AVAILABLE

Promoters:

<u>BioBrick</u>	Relative Output
BBa_J23117	162
BBa_J23106	1185
BBa_J23100 (RFP Promoter)	
BBa_J23103 (only for cell lysis)	17

Ribosome Binding Site:

BioBrick

- BBa_B0033 (weak)
- BBa_B0030 (strong)
- BBa_J61106 (Anderson RBS)
- J61107 (weak, cell lysis only)

Transcription Terminator:

BioBrick

- BBa_B0014
- BBa_B1007
- BBa_J61048 (rnpB terminator)
- J61107 – Terminates 90% of all sequence that is being transcribed

Gene of Interest:

BioBrick

- BBa_J31003 (kan resistance)
- BBa_J07009 (toxicity-gene activator from Vibrio cholerae)
- BBa_J45002 (SAM:benzoic acid carboxyl methyltransferase; converts benzoic acid to methyl benzoate (floral odor))
- BBa_I712667 (HIV-1 aspartyl protease). HIV-1 aspartyl protease is a protease that is essential for the life-cycle of HIV and cleaves proteins at specific amino acid sequence
- BBa_K112300 - lambda lysozyme – lysis and cell death protein only compatible with J23103 promoters and J61107 ribosome binding sites