**Transformation of Electro-competent Cells**

* **Required Items**
* Electrocompetent cells
* 15 mL centrifuge tubes
* 0.2 cm cuvettes (0.1 cm may be used as desired)
* SOC medium
  + 2% g Tryptone
  + 0.5% Yeast extract
  + 10 mM NaCl
  + 10 mM MgCl2
  + 2.5 mM KCl
  + 20 mM Glucose

1. Collect on ice:
   1. Tubes with 50 μL of electrocompetent cells
   2. Plasmid(s) to be used for transformation

Also collect:

1. 15 mL centrifuge tubes (or Falcon tubes)
2. 0.2 cm cuvettes
3. SOC medium
4. Add 1-2 μL of plasmid to 50 μL of cells and mix gently with pipette tip.
5. Pipette 50 μL of the cells + plasmid into a 0.2 cm cuvette (try to minimize air pockets).
6. Electroporate cells using the Bio-Rad Genepulser Xcell
7. Add 1 mL of SOC medium to the cuvette and pipette up and down a couple of times to mix the SOC with the cells.
8. Pour mixture into a 15 mL centrifuge tube (or 14 mL Falcon Tube).
9. Allow cells to recover by nutating for 1 hour at 37 °C.
10. [*Optional based on expected efficiency*]
    1. Transfer the cells to 1.5 mL tubes and centrifuge at 11,000 RPM for 30 seconds in a microcentrifuge.
    2. Remove the supernatant and resuspend the cells in 100 μL of SOC medium (alternatively, use whatever amount might remain after pouring off the supernatant).
11. Plate 100 μL of several dilutions (or other desired volume) onto plates with the appropriate antibiotic(s) and incubate overnight at 37 °C.