**Transformation of competent cells – Heat shock method**

**Aim**
To introduce plasmid DNA into competent cells in an easy and quick method.

**Materials & Equipment**
- Competent cells (100µl inoculum)
- Minimum of 50ng of plasmid DNA
- 1ml LB
- LB plate with appropriate antibiotics

**Experiment procedure**
1. Take competent E.coli cells from –80°C freezer and thaw on ice.
2. Turn on water bath to 42°C.
3. Add 50 ng of circular DNA into E.coli cells; Incubate on ice for 30 min.
4. Put tube(s) with DNA and E.coli into water bath at 42°C for 90 seconds.
5. Put tubes back on ice for 5 minutes to reduce damage to the E.coli cells.
6. (Optional) Repeat steps 4 and 5 one more time.\(^1\)
7. Add 1 ml of LB and incubate tubes for 45 min at 37°C (for ligation incubate 1hr)
8. Spread about 100 ul of the resulting culture on LB plates + Antibiotics and grow O.N
9. Pick colonies about 12-16 hours later.

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