MAR 27, 2019

Transformation of Chemically Competent (Smart) Cells

Moriah Beck¹, Abby Jurgensmeier¹

¹Wichita State University

Beck Lab

Abby Jurgensmeier

OPEN ACCESS

DOI:
dx.doi.org/10.17504/protocols.io.ssfeebn

Protocol Citation: Moriah Beck, Abby Jurgensmeier 2019. Transformation of Chemically Competent (Smart) Cells. **protocols.io** <https://dx.doi.org/10.17504/protocols.io.ssfeebn>

License: This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working
 We use this protocol and it's working

Created: Aug 21, 2018

Last Modified: Mar 27, 2019

PROTOCOL integer ID:
 14887

GUIDELINES

A video explaining the technique: http://www.jove.com/science-education/5059/bacterial-transformation-the-heat-shock-method?utm_campaign=website&utm_source=sendgrid.com&utm_medium=email

- 1 Remove cells from the -80 °C freezer and place directly into your ice bucket. Thaw on ice for 15 minutes.

- 2 Add DNA from plasmid to be transformed. For ligations/PCR products use 10uL of ligation reaction per 50-100uL of cells. For purified plasmid (miniprep), use 1 uL of plasmid per aliquot of cells. Do not mix or stir the cells they are very fragile.
- 3 Incubate cells on ice with the DNA for 30 minutes, in the meantime make sure there is a 42°C water bath/block that has water in it.
- 4 Bring ice bucket with cells and a timer over to the water bath/heat block. Immerse tube of cells in 42°C bath for 45-60 seconds.
- 5 Remove tube from waterbath and place directly on ice to recover for 2 minutes.
- 6 Add 900 uL of sterile LB (no antibiotics) and grow with shaking for 1 hour at 37 °C.
- 7 Plate out 50-200 uL on antibiotic selective plate of choice OR if cloning (small amounts of DNA for transformation) proceed to next step.
- 8 Spin cells in tabletop centrifuge for 1 minute at ~2,000 rpm, remove 700uL of media and resuspend the cell pellet in the remaining media in the tube. Plate this onto the correct antibiotic LB plate.