**Transformation of Syn7942**

Prepare apparatus:

125 ml flask x2 autoclaved

BG-11 at least 400 ml sterile

Plasmid DNA (pPIGBACK-crtZ C4) 10 ug

BG-11 plate with 20 ppm Ampicillin

Transformation of Syn7942

1. 50 mL of cells were diluted to the optical density of 0.1 at 730 nm (OD730) and cultured for 24 h with continuous illumination at 30 C.
2. When an OD730 around 0.5 was reached, log phase cyanobacterial cells were collected by centrifugation at 5000 g for 5 min at 25 C.
3. The harvested cells were washed and resuspended in 1 ml of fresh BG-11 medium followed by incubation with 1–3 ug of plasmid DNAs in the 5 cm dish for 24 h in dark with shaking 100 rpm.
4. Then the cyanobacterial cells were transferred to the 9 cm dish with a total of 10 ml of BG-11 medium and grown for another 24 h in dark 100 rpm.
5. After 2 days of incubation with plasmid DNAs, plate the suspension in 20 ug /ml1 of ampicillin BG-11 plate for the selection of transformants.
6. The transformants were further maintained in BG-11 medium