

Balloon E. coli

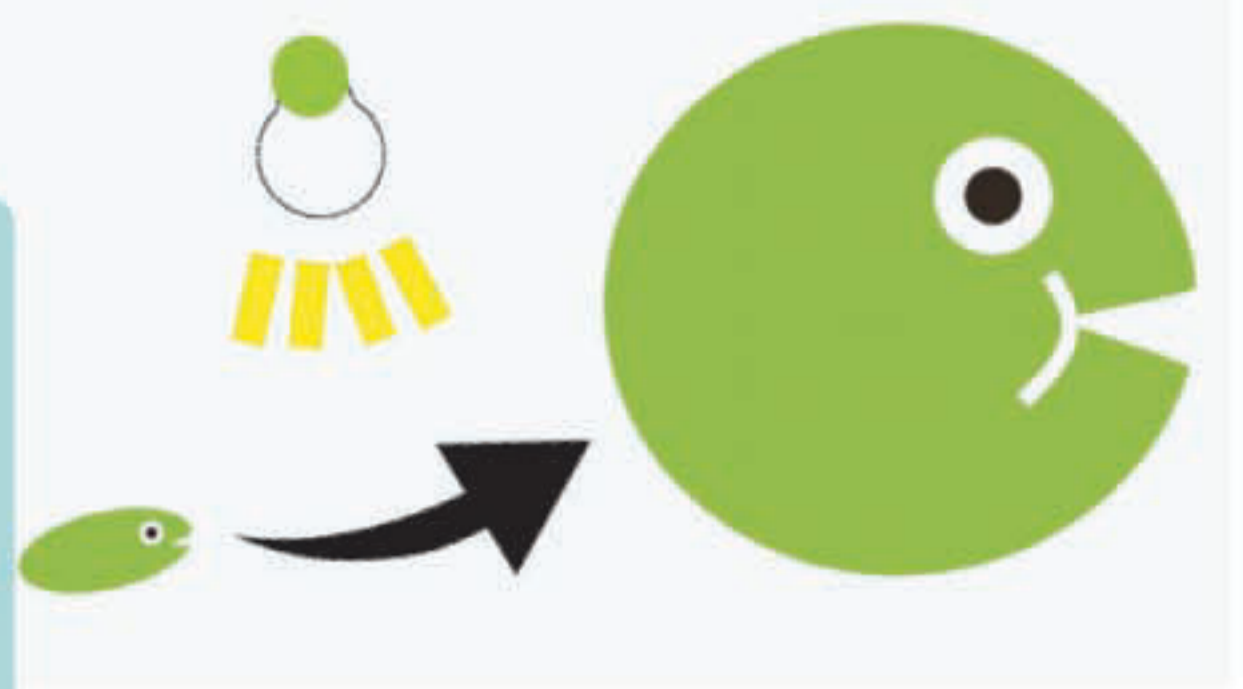
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Goal ~ The light grow the *E. coli*

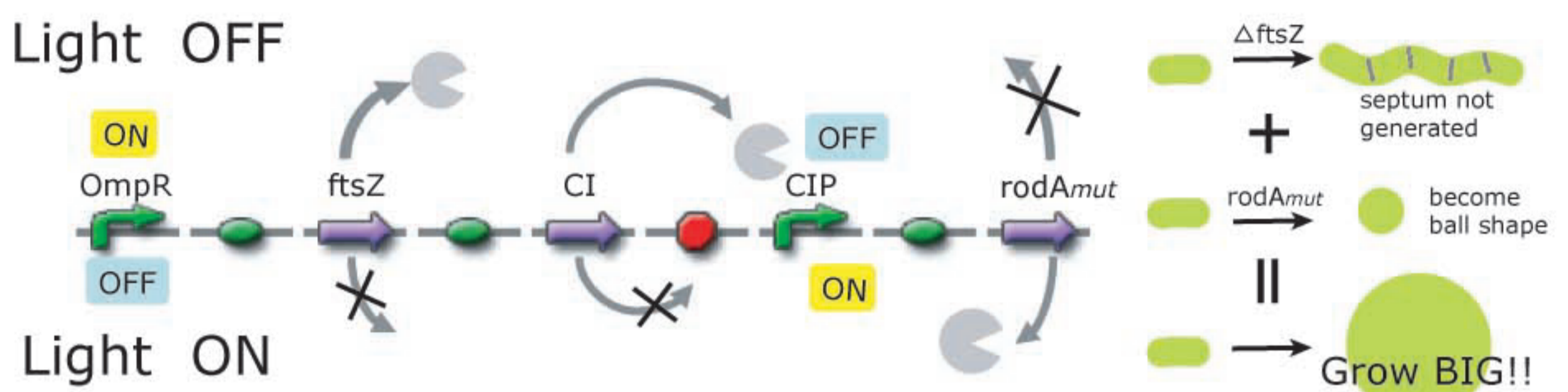
When the light shine the *E. coli*,
They are growing bigger and bigger.

LIKE A BALLOON!!!!

- FACS sorting easier
- More protein/cell
- Curiosity; to what extent can bug swell without system failure (Can it be observable by naked eyes?)



Construct

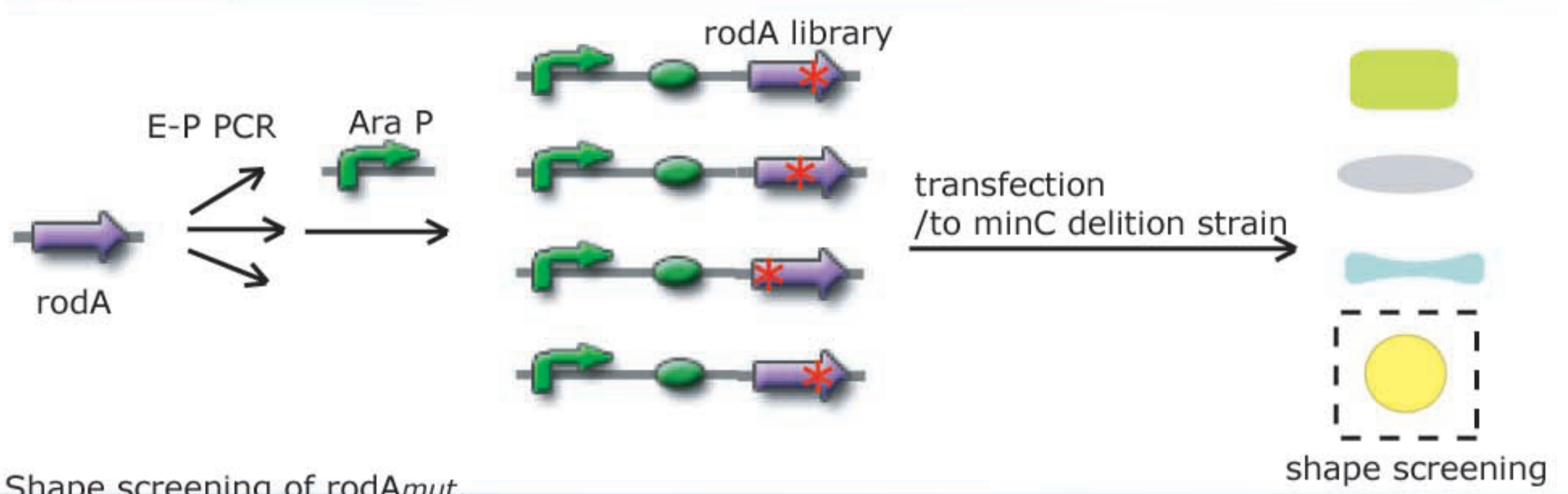


Begg, K. J. et al., *J. bacteriol.* **163**, 615-622 (1985).

Experiments and Results

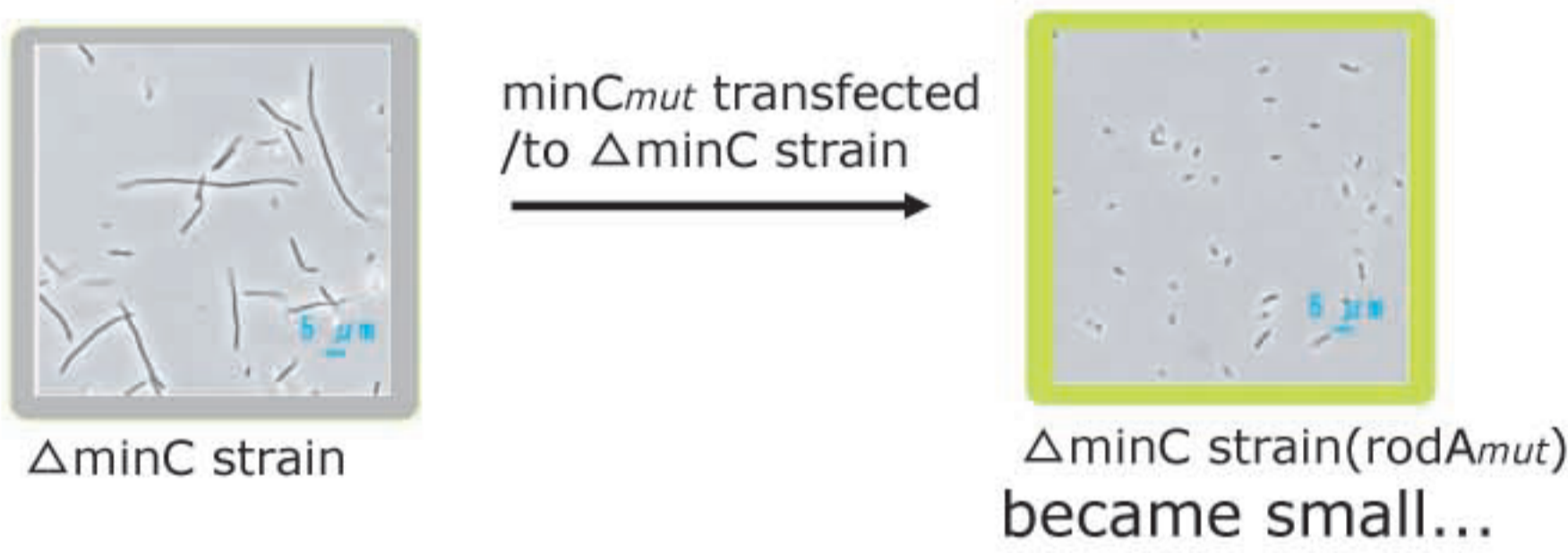
Development of rodAmut

Expression system of rodA mutant



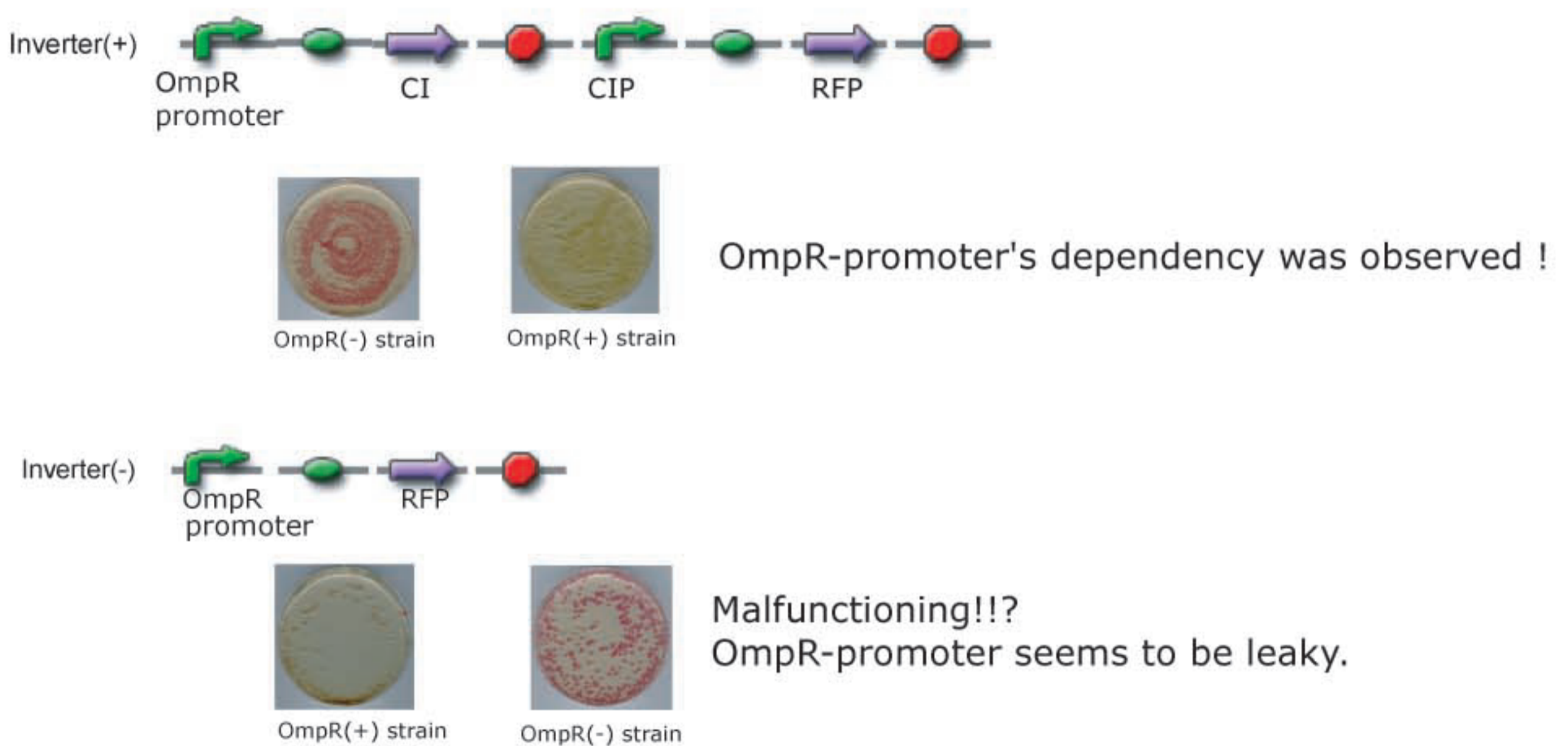
Shape screening of rodAmut.

MinC is the gene involved in septum production.
ΔminC strain cannot divide well. (cell grow like a fiber.)



Construction of CI inverter

OmpR-dependency



Discussion and Future

1. We got the rodAmut that make *E. coli* spherical.
2. ΔminC strain formed fiber-like shape.
3. RodA expression in ΔMinC strain resulted in small and spherical shape.
Did not swell as we expected...(Ouch!!!)
4. Inverter constructed. OmpR dependency was observed. But didn't respond right to osmolarity. (OmpR-promoter seems to be leaky.)