(1) Colony observation

1. Purpose of the experiment: to determine the success of transformation.

2. Experimental equipment

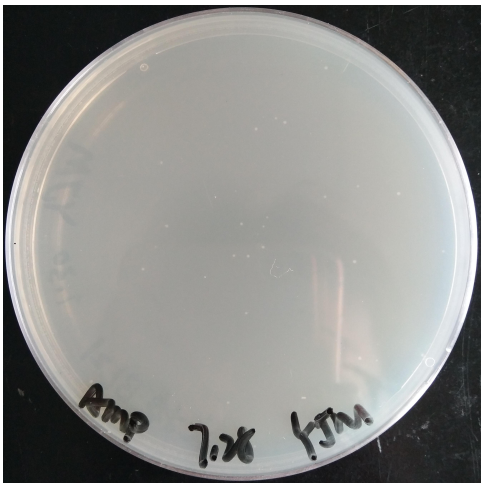
2.1. Reagent: BL21+dusk-eGFP-pUC57 bacteria

2.2. Instruments: none

3. Experimental steps

To observe whether there was a single colony on the plate of the experimental group and the negative control groups, and to take pictures.

4. Experimental result



Picture 1. BL21+dusk-eGFP-pUC57

(2) Inoculation culture

1. Purpose of the experiment: to detect the effect of optically controlled amplification and to find the optimum condition.

2. Experimental equipment

2.1. Reagents:BL21+dusk-eGFP-pUC57 single colony, BL21+T7-dusk-eGFP-pUC57 bacterial solution, IPTG, Amp, ddH_2O, LB liquid medium.

2.2. Instruments: alcohol lamp, test tubes (each containing 5ml LB liquid medium), liquid transfer guns and gun heads, Kraft paper, blue light irradiation device, 37℃ oscillating incubator, etc.

3. Experimental steps

At the side of the ignited alcohol lamp, 5μl Amp was added to 18 test tubes with a liquid transfer gun, then mixing the single colony into 8 test tubes from the plate with BL21+dusk-eGFP-pUC57 bacteria respectively, and numbering them. Four of them were wrapped in double kraft paper, and the other four were placed in the blue light irradiation device. BL21+T7-dusk-eGFP-pUC57 bacterial solution was mixed with 200 mg, 150 mg, 100 mg, 50 mg, 0 mg IPTG in each two test tubes. Both of them were mixed with double layers. A Kraft paper package. All the test tubes were cultured in 37℃ oscillating incubator.

Number	Bacteria species	Culture method	Culture time	IPTG/mg
1	BL21+T7-dusk-eGFP-pUC57	No light	24 hours and 48 hours	200
2				150
3				100
4				50

5				0
6	BL21+dusk-eGFP -pUC57	No light		0
7		Blue light		0