

# Lyophilization

## Aim of the experiment

1. Investigate the lyophilization effect on the activity of Cas13 protein
2. Lyophilize the detecting system on the chip to combine with our device

## Materials

Cas13 protein (in storage buffer)

Corresponding crRNA

Fluorescence reporter

Lyophilizer

## Procedure

1. Table 1 the system for lyophilization

Reagents	Volume/uL
Cas13 protein(2.25uM)	1.66
crRNA(0.5uM)	4.14
Fluorescence reporter(5uM)	2.3

2. Use RNase away to wipe the clean bench and the consumables needed for the experiment.
3. Thaw sufficient amounts of crRNA,fluorescence reporters and Cas13 protein aliquot on ice, covered with aluminum foil to protect from light exposure. Dilute these materials to the corresponding concentration (Cas13 protein:2.25uM,crRNA: 0.5uM,fluorescence reporter:5uM)Sufficient amounts are calculated on the basis of the number of desired reactions, with a minimum 15% excess.

4. Mix the reagents in the 1.5mL Eppendorf tube according to Table 1 (for combining with device, add the reagents to the chip).
  5. Then put the mixture/chip in -80 C refrigerator for 4 hours.
  6. Open the tube lid and put the frozen mixture into the lyophilizer for 8h.
  7. Take out the mixture, and close the lid immediately.
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