Handling and resuspension of dried esiRNA

Storage

Upon arrival your esiRNA should be resuspended in TE buffer (pH 8) and stored at -20°C. Aliquot your esiRNA to minimize the number of freeze-thaw cycles.

Resuspension

In order to bring the dried esiRNA back into solution follow steps 1 - 6:

1. Centrifuge tubes briefly to collect dried content at the bottom of the tube
2. For the intended esiRNA concentration add the appropriate amount of TE buffer (pH 8.0) to the tube, briefly vortex and pipette solution up and down carefully several times (see table 1)
3. Mix solution in a thermomixer for 30 min at 1000 rpm at room temperature
    - In case no thermomixer is available, briefly vortex your solution several times until the entire dried pellet has gone into solution
4. Centrifuge tubes briefly
5. Check concentration on a UV spectrophotometer in order to verify concentration
6. Aliquot and freeze esiRNAs at -20°C for long-term storage or use immediately for transfection

Table 1: esiRNA resuspension volumes for different stock concentrations. Other concentrations can be achieved by adapting the volumes accordingly. It is not recommended to store esiRNAs at concentrations of ≤100 ng/µl. (Average molecular weight of an esiRNA is 14490 g/mol)

Ordered Scale [µg]	Amount [nmol]	Desired esiRNA Concentration [ng/µl]	Volume of TE Buffer [µl]
20	1.4	200	100
		400	50
50	3.5	200	250
		400	125

Frequently Asked Questions

Can I resuspend esiRNA in water?

It is not recommended to resuspend your esiRNA in water. In general, nucleic acids are more prone to degradation when dissolved in unbuffered solutions due to changes in pH.

How long are the esiRNA stable?

If resuspended in the appropriate buffer and stored at -20°C, esiRNA will be stable for at least 2 years.

After resuspension the measured esiRNA concentration deviates from the intended concentration given in table 1?

Make sure to dilute your esiRNA in the appropriate resuspension buffer and blank the UV spectrophotometer using the same buffer. The 260 nm reads of your sample should be within the linear range of the instruments detector. Especially lower concentrations are not measured accurately. The use of other detection instruments can also lead to variations in the measured concentration.

How long can dried esiRNA be stored at room temperature?

Dried esiRNA are stable at room temperature for at least 3 weeks but should be brought into solution as soon as possible and stored at - 20 °C.

How can I convert the µg scale in nmol?

Following the formula given below, the ordered scale has to be divided by the average molecular weight of an esiRNA (average length 21 bp), which is 14,490 g/mol.

$$n\,[mol] = \frac{m[g]}{M\,[\frac{g}{mol}]}$$

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