DNA Oligonucleotide Resuspension and Storage – from IDT website

Upon receiving newly synthesized oligonucleotides, researchers must decide how to resuspend and store the product. Here are some guidelines and recommendations.

Resuspension

Keep in mind

Most commercially synthesized oligonucleotides are shipped as lyophilized product. Dried DNA is usually very easy to resuspend in an aqueous solution. However, not all oligonucleotides dry identically and some require more time to go into solution than others. It is also possible for the dried oligonucleotide to become dislodged from the tube during shipping. Thus, it very important to spin down every oligonucleotide prior to opening the tube for resuspension.

Aqueous buffer

Resuspend oligos in TE buffer (10mM Tris; 0.1 mM EDTA; pH 8.0) as this buffer will maintain a constant pH. Alternatively, use nuclease-free water. DEPC water will harm oligonucleotides and water from deionizing systems can be overly acidic, with a pH as low as 5.0.

Concentration

Oligonucleotides can be stored at a large range of concentrations. However, concentrations <1 µM may change over time as some of the oligo can adhere to the plastic of the tube. A 5−10 mM solution is generally the highest concentration at which an oligo will go into solution. Resuspension calculations can be made using yield information contained on IDT product specification sheets and on the oligo tube. There you will find the actual yield of the oligonucleotide synthesis in three forms: optical density units (OD); mass (in mg); and copy number (in nmole). At IDT, we routinely resuspend dry oligonucleotides to a storage stock concentration of 100 µM and then dilute a portion of this to create working stock solutions.

To make a 100 µM concentration stock solution: Take the number of nmoles in the tube and multiply that by 10. This will be the number of µL buffer to add to get a 100 µM solution. For example, if you have 9 nmoles oligo, add 90 µL buffer to make a 100 µM solution. If you prefer to work in other units or to resuspend to a different concentration, a Dilution Calculator is available in the SciTools section of the IDT website.

Resuspension

For hard-to-suspend oligos, heat the oligonucleotide at 55°C for 1−5 minutes, then vortex thoroughly. If there is still a visible precipitate in the tube, the sample may contain silica which is a by-product of oligo synthesis. It will not affect the performance of the product, and may be removed through filtration or decanting the supernatant.

Storage

Long-term storage

If you would like to use a portion of the oligonucleotide immediately and then store the remaining mass for future use, it is best to resuspend the entire product in TE (Tris-EDTA, pH 8.0) at the desired stock solution concentration. Take a sufficient volume for immediate use from this stock and dilute it to a working stock concentration. The remaining oligonucleotide solution can be treated in one of two ways for subsequent long-term storage. The ideal situation is to dry the DNA down and store it at –20°C. If this is not practical, then the next best thing is to make small aliquots of the stock suspension and store these at –20°C. Creating aliquots will allow you to avoid potential contamination from use of a single tube.

Short-term storage

Short-term storage of oligonucleotides at 4°C is acceptable as long as this does not exceed 7 months.

Stability testing

IDT does ongoing stability testing using some of the worst-case sequence designs to monitor long-term storage stability. The results below show the approximate time oligos can be stored at various temperatures before degradation begins. These times are when the first signs of degradation are observed, but oligos are often used after these time frames with success. Because stability will vary depending on the sequence and structure of the oligo and the particular conditions in which it is stored, IDT does not guarantee any specific shelf life for an oligo.

Storage Conditions	Degradation Begins After
At room temperature in water	60 days
At room temperature in TE or dry	7 months
At 4°, -20°, or -80° in TE, water, or dry	7 months
At -20° dry	24 months

from http://www.idtdna.com/pages/decoded/decoded-articles/core-concepts/decoded/2011/03/16/dna-oligonucleotide-resuspension-and-storage