

For Optimal Performance:

- Aptamers must be folded into their tertiary structure using Folding Buffer prior to use.
- The final solution used to dilute aptamer to working concentration **must** contain 1mM MgCl₂.
- Thiolated aptamers should be reduced prior to EACH use (see protocol on reverse).
- Aptamers labeled with a light-sensitive dye should be protected from light until use.

Buffers

Resuspension Buffer (Base Pair Product # RTW0001): This buffer is used to reconstitute the lyophilized aptamer to 100 μM. Aptamers should NOT be diluted to working concentration in this buffer, as certain components will inhibit the proper folding of the aptamer (Alternatively, non-DPEC-treated nuclease-free water may be used).

Amine Resuspension Buffer (Base Pair Product # RTW0002): This buffer is used to reconstitute the lyophilized amine modified-aptamer to 100 μM. Aptamers should NOT be diluted to working concentration in this buffer, as certain components will inhibit the proper folding of the aptamer (Alternatively, non-DPEC-treated nuclease-free water may be used).

Aptamer Folding Buffer (Base Pair Product # RTW0003): This buffer is used to fold aptamers at an intermediate concentration prior to use.

Aptamer Reducing Buffer (Base Pair Product # RTW0004): This buffer is used to reduce thiolated aptamers immediately prior to use.

Application Buffer: This is the final solution used for dilution of the aptamer to its working concentration, and is provided by the customer. Final application buffer formulations will vary from one application to the next, but should contain 1 mM MgCl₂, or a similar magnesium salt, for optimal aptamer performance. Base Pair does not currently offer pre-made application buffers.



Storage of Lyophilized Aptamer

While lyophilized aptamers are generally very stable, storage of aliquots in a non-defrosting -20°C freezer is recommended for maximum long-term stability.

Aptamer Resuspension

1. Briefly centrifuge the aptamer tube to ensure the dried aptamer pellet is at the bottom.
2. Resuspend the aptamer pellet in **Resuspension Buffer** (or, for amine-modified aptamers, Amine Resuspension Buffer) using the volume indicated in the Packing Slip that was included in your aptamer shipment.
3. Quickly spin the sample down (>1000 x g for a few seconds).
4. Aliquot and store in a non-defrosting -20°C freezer.

Aptamer Folding / Dilution to Working Concentration

1. Prior to use, dilute the aptamer to 10 - 100x working concentration in **Aptamer Folding Buffer**.
2. Heat the aptamer solution to 90-95°C for 5 minutes.
3. Allow the aptamer solution to cool to room temperature (~15 minutes). Aptamers are conformationally stable for at least one week at room temperature unless the salt or temperature is significantly changed (falls below 0°C or rises above 30°C).
4. Thiolated aptamers should be reduced prior to use. See procedure below.
5. The aptamer can now be further diluted into the final working buffer for your specific application, or Application Buffer. Please note that it should contain 1 mM MgCl₂ for optimal aptamer performance. Any wash buffers should also contain 1 mM MgCl₂ for optimal aptamer performance.

Reducing Thiolated Aptamers

After properly folding following the procedure above, thiolated aptamers must be reduced. For optimal performance, we strongly recommend reducing thiolated aptamers immediately prior to each use. Reduced aptamers can NOT be frozen, as freezing unfolds the aptamers.

1. Combine folded aptamer 1:1 (equal volumes) with **Aptamer Reducing Buffer**.
2. Incubate for 10 minutes at room temperature (20-25°C).
3. The aptamer should now be diluted into the final working buffer, or Application Buffer, containing 1 mM MgCl₂ and used immediately.

Technical Support

For additional assistance, contact Base Pair at support@basepairbio.com or 1-832-230-5518.