General Handling Guide for Aptamers

Instructions

* If not ordered otherwise, all custom aptamers are ready for use upon resuspension with the exception of thiol-modified aptamers (see **REDUCTION PROTOCOL** on next page). Aptamers are shipped on room temperature in a dried form and are attached to the container wall like a film. Appearance of aptamers may be transparent.
* Aptamers are stable at neutral pH range (7.0 - 8.0).
* Aptamers labeled with light-sensitive dyes (such as Cy3) or PC-linker are provided in opaque brown container to protect their activity.

Reconstitution

1. Before open the container, always briefly **SPIN DOWN** for the first time after delivery to avoid loss of the aptamer pellet.
2. Dissolve the stock aptamers completely to the desired stock concentration with buffers or purified water, by shaking.
   - DNase free purified water or any biological buffers (such as PBS, HEPES, Tris, etc.) are suitable. Forthe dilution of aptamers, please use proper buffer for your experimental condition. The recommended diluent volume is 100ul-1ml. The concentration depending on your application and the yield of the resulting product.
   - Addition of divalent cation such as magnesium in buffer is optional for maintaining proper structure of aptamer. **(Final 1 ~ 5mM $MgCl_2$ is recommended)**
3. Aliquot and store stock aptamers at -20°C to -70°C until you use it.
   - Make a stock solution and working aliquots which should be thawed relatively infrequently.

Heating & cooling (H&C) step

1. Before every use, perform Heating & cooling (H&C) step for the PROPER FOLDING of aptamer structure in buffer including 1~5mM $MgCl_2$
2. Please heat aptamers in proper buffer solution at **95°C for 5 min**., and then leave the tubes on the **bench for 15 min.**

Storage

* Aptamers are stable in solution of neutral pH at 4°C. Properly reconstituted aptamers stored at -20°C to -70°C should be stable.
* For long term use, aliquoting is recommended. Please keep the aliquots at -20°C to -70°C and avoid freeze-thaw cycles.
* Aptamers labeled with light-sensitive dyes or PC-linker could lose their ability over time, please keep in dark place.

Reduction protocol for thiol aptamer

If you want to use thiol aptamer, we recommend to have a reduction step prior to each use.

1. Dissolve thiol aptamer in reducing solution
   e.g. 292.5ul of DW, 7.5ul of 2M Triethylammonium acetate, 3ul of 1M DTT, 3ul of Triethylamine
2. Incubate at Room temperature for 1.5 hours
3. Perform Desalting step and buffer exchange with Centrifugal Filter, Ethanol precipitation or HPLC

FAQ

1. What is the size of your aptamers?

- Please refer to the product report delivered with aptamers. In general, aptamer consists of less than 76 bases and is ~25kDa in size.

2. Can aptamer be used in the same applications as antibodies?

- Aptamer can be used for the typical antibody mediated methods such as immunofluorescence, flow cytometry and immunoprecipitation. Aptamer can also be used for double staining together with an antibody provided that aptamer and antibody is not directed against the same epitope on the antigen.

3. What is the recommended range of pH?

- Aptamer is stable at neutral pH range (pH7.0 - 8.0). Aptamer may degrade in low pH buffer solution.

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AMSBIO| www.amsbio.com | info@amsbio.com

UK & Rest of the World
184 Park Drive, Milton Park
Abingdon OX14 4SE, U.K.
T: +44 (0) 1235 828 200
F: +44 (0) 1235 820 482

North America
1035 Cambridge Street,
Cambridge, MA 02141.
T: +1 (617) 945-5033 or
T: +1 (800) 987-0985
F: +1 (617) 945-8218

Germany
Bockenheimer Landstr. 17/19
60325 Frankfurt/Main
T: +49 (0) 69 779099
F: +49 (0) 69 13376880

Switzerland
Via Lisano 3
(CP.683)
6900 Massagno
T: +41 (0) 91 604 55 22
F: +41 (0) 91 605 17 85