

TECHNICAL BULLETIN

Synthesis and Deprotection of Selectively Binding Complementary (SBC) Oligos that contain both 2-thio-dT and 2-amino-dA

Synthesis

Specific coupling times and reagents necessary to obtain clean syntheses of SBC oligos are specified below:

phosphoramidite	catalog #	Coupling time
2-amino-dA	10-1085	extend to 15 minutes
2-thio-dT	10-1036	regular

Oxidizing solution 0.02 M I₂ in THF/Pyridine/H₂O appropriate for synthesizer

Deprotection

Materials

- 10% solution of DBU in acetonitrile
Prepare by mixing 0.1 mL of DBU (1,8-Diazabicyclo[5.4.0]undec-7-ene) in 0.9 mL acetonitrile. DBU is available from Aldrich (catalog # 13,900-9).
- 30% ammonium hydroxide (SG 0.88)
- 1 mL polypropylene syringes (2) that are rubber and silicon oil free (Aldrich #Z23,072-3 or equivalent).

Method

- 1) After completing the oligonucleotide synthesis, load 1 mL of 10% solution of DBU into a syringe and attach it to the synthesis column. On the other side of the column, attach the empty syringe. Flush the 10% DBU solution back and forth over the oligonucleotide support for a few minutes and then let the solution sit over the support for a total of 20 minutes at room temperature. [NOTE: the DBU solution is both toxic and corrosive. Use appropriate safety precautions (eye protection and solvent resistant gloves at minimum)].
- 2) After treating the support for 20 minutes, discard the DBU solution and rinse the support 3 or 4 times using 1 mL volumes of fresh acetonitrile.
- 3) Dry support over an argon stream and transfer to a 4 mL vial. Add 1 mL of ammonium hydroxide, seal and keep at 55 °C for 17 hours.
- 4) At this point, the oligonucleotide is now deprotected and cleaved from the support. It now is ready for Poly-Pak™ purification or may be dried and HPLC or PAGE purified.

