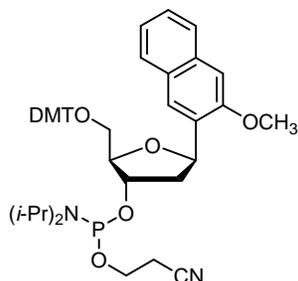


dNaM
Product No. BA 0343
Product Information



$C_{46}H_{53}N_2O_7P$
Mol. Wt.: 776.93

Half of a novel base pair that achieves pair recognition through hydrophobic interactions.

Romesberg and co-workers have recently published multiple reports on the expansion of the genetic alphabet, describing the discovery, characterization and optimization of several novel base pairs.¹⁻⁷ Interestingly, these efforts to find novel base pairs have focused on hydrophobic interactions as the basis for pair recognition. The reliance on base pair hydrophobicity also disfavors pairing with the four natural nucleobases which, of course, depend upon the distinct H-bonding patterns of more polar heterobases to promote pair recognition. The **dNaM (BA 0343)** and **d5SICS (BA 0344)** matched pair appears to be a very interesting novel base pair. These unnatural C-nucleosides have pair recognition that rivals the A-T and G-C pairing in the natural genetic alphabet. In addition, they have been shown to be well-replicated by DNA polymerases under steady-state conditions, regardless of sequence. The fidelity and efficiency of **dNaM** and **d5SICS** replication approach those of natural synthesis. Both **dNaM** and **d5SICS** are also efficiently transcribed by T7 RNA polymerase in either direction.

Use: Employ acetonitrile diluent at the concentration recommended by the synthesizer manufacturer. Use standard coupling protocols; in our hands, extended coupling times were not required. Cleavage from the solid support may be carried out by standard procedures. Standard nucleobase deprotection conditions may be employed.

References

1. Seo, Y.J.; Matsuda, S.; Romesberg, F.E. *J. Am. Chem. Soc.*, **2009**, *131*(14), 5046-7.
2. Seo, Y.J.; Hwang, G.T.; Ordoukhanian, P.; Romesberg, F.E. *J. Am. Chem. Soc.*, **2009**, *131*(9), 3246-52.
3. Seo, Y.J.; Romesberg, F.E. *ChemBioChem*, **2009**, *10*(14), 2394-2400.
4. Hwang, G.T.; Hari, Y.; Romesberg, F.E. *Nucleic Acids Res.*, **2009**, *37*(14), 4757-63.

5. Hari, Y.; Hwang, G.T.; Leconte, A.M.; Joubert, N.; Hocek, M.; Romesberg, F.E. *ChemBioChem*, **2008**, 9(17), 2796-9.
6. Hwang, G.T.; Romesberg, F.E. *J. Am. Chem. Soc.*, **2008**, 130(44), 14872-82.
7. Leconte, A.M.; Hwang, G.T.; Matsuda, S.; Capek, P.; Hari, Y.; Romesberg, F.E. *J. Am. Chem. Soc.*, **2008**, 130 (7), 2336-43.