7-deaza-8-aza-dA

Category: Structural Studies
Modification Code: 7-deaza dA
Reference Catalog Number: 26-6904

5 Prime: Y
3 Prime: Y
Internal: Y
Molecular Weight (mw): 313.2

7-deaza-8-aza-deoxyadenosine (7-deaza-8-aza-dA) is a deoxyribonucleoside in which the 7-nitrogen and 8-carbon are flipped. The resulting modified dA is unable to form a hydrogen bond at position 7, but can at position 8, of the base. The result is that the 7-deaza-8-aza-dA : dT base pair has essentially the same duplex stability as that of the unmodified A : T base pair, and is more stable than the 7-deaza-dA : dT base pair (1). Similar to 7-deaza-dA, 7-deaza-8-aza-dA can be used for modulate the amount of structural DNA bending existing within long polyA regions of single- and double-stranded oligonucleotides (2).

Furthermore, 7-deaza-8-aza-dA is specifically recommended over 7-deaza-dA whenever multiple insertions of a 7-deaza-dA-type modification into an oligo must be done. This is because 7-deaza-8-aza-dA is stable to the iodine-based oxidizer solution used in phosphoramidite-based DNA synthesis, while 7-deaza-dA is sensitive to it. References

2. Seela, F.; Grein, T. 7-Deaza-2'-deoxyadenosine and 3-deaza-2'-deoxyadenosine replacing dA within d(A6)-tracts: differential bending at 3'- and 5'-junctions of d(A6)-d(T6) and B-DNA. Nucleic Acids Res. (1992), 20: 2297-2306.