Product Specifications

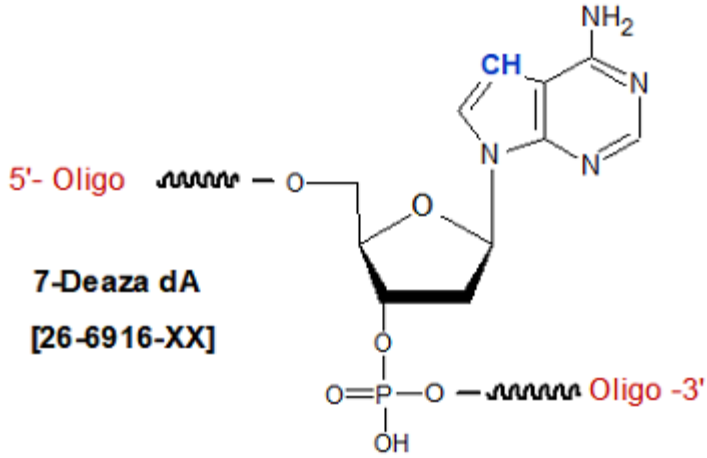
Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos, Fluorescent dyes, Affinity Ligands, Spacers & Linkers, Duplex Stabilizers, Minor bases, labeled oligos, Molecular Beacons, siRNA, phosphonates Locked Nucleic Acids (LNA); 2′-5′ linked Oligos

Oligo Modifications

For research use only. Not for use in diagnostic procedures for clinical purposes.

7-deaza-dA

Category	Structural Studies
Modification Code	7-deaza-dA
Reference Catalog Number	26-6916
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	312.22



7-deaza dA has a nitrogen at position 7 replaced by a carbon. [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**

1. Seela, F.; Zulauf, M. Synthesis of oligonucleotides containing pyrazola[3,4-d]pyrimidines: The influence of 7-substituted 8-aza-7-deazaadenines on the duplex structure and stability. *J. Chem. Soc., Perkin Trans.* (1999), **1**: 479-488.
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.