



Product Specifications

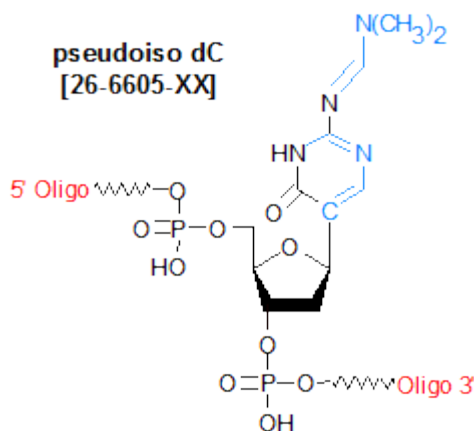
Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos, Fluorescent dyes, Affinity Ligands, Spacers & Linkers, Duplex Stabilizers, Minor bases, labeled oligos, Molecular Beacons, siRNA, phosphonates Locked Nucleic Acids (LNA); 2'-5' linked Oligos

Oligo Modifications

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

pseudoiso dC (pidC)

Category	Minor Bases
Modification Code	pidC
Reference Catalog Number	26-6605
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	303



Deoxypseudoisocytidine (PidC) is an isostere of dC that offers an additional hydrogen-bond donor at the N3 position, compared with the natural dC base. Because of this property, PidC-modified oligonucleotides are primarily used to enhance triple-helix formation between single-stranded polypyrimidine oligonucleotides and duplex DNA. Under standard conditions, protonation of the N3 position of the single (Hoogsteen) strand is required in order to stabilize triple-helix formation within the C-GC pyrimidine-purine-pyrimidine binding motif. Acidic conditions are required to convert C-GC into (C⁺)-GC, which drives the Hoogsteen base pairing between the N3-protonated cytidine and G (2). However, under physiological conditions (which are neutral/slightly basic), deprotonation of this cytidine occurs, and Hoogsteen base pairing is disrupted, destabilizing the triple helix. Substitution of PidC for dC in the polypyrimidine single strand allows for the formation of PidC-dG Hoogsteen base pairs via hydrogen bonding between the N3 of PidC and dG at neutral pH. **References**

1. Ono, A., Ts'o, P.O.P., Kan, L.S. Triplex formation of an oligonucleotide containing 2'-O-methylpseudoisocytidine with a DNA duplex at neutral pH. *J. Org. Chem.* (1992), **57**: 3225-3230.
2. Rich, A. DNA comes in many forms. *Gene* (1993), **135**: 99-109.