Product Specifications

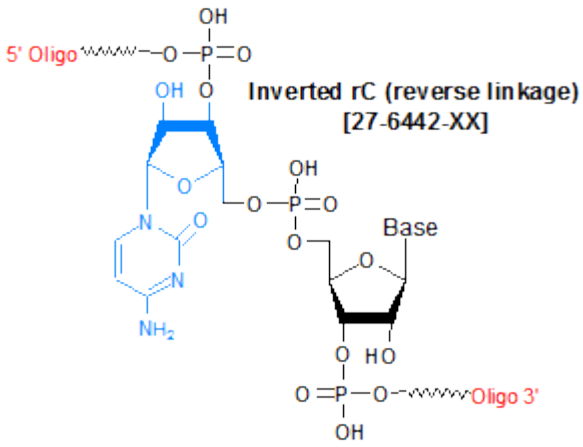
Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos, Fluorescent dyes, Affinity Ligands, Spacers & Linkers, Duplex Stabilizers, Minor bases, labeled oligos, Molecular Beacons, siRNA, phosphonates Locked Nucleic Acids (LNA); 2′-5′ linked Oligos

Oligo Modifications

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

Inverted rC (reverse linkage)

Category	Minor Bases
Modification Code	Inv-rC
Reference Catalog Number	27-6442
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	329.21



Reverse synthesis can be achieved by incorporation modifications where the synthesis orientation can be changed as desired. Oligo can be designed for the production of 5'-5' or 3'-3' linkages or a combination of these in the same oligo. These modified phosphodiester linkage modified oligos are useful in antisense studies, or to synthesize oligonucleotide segments in the opposite sense from normal synthesis, for structural studies.

Having a single inverted base at the 3' position with a 3'-3' linkage imparts the oligo exonuclease resistance and prevents extension by polymerases as there is no free 3' hydroxyl group to initiate synthesis.

Construct Examples 5'-NNNNNNNN-3'-3'-NNNNNNNN-5'

The construct shown above starts at the right side in orange font 5' end with an inverted base, towards the left side is the 3' end. This orientation will continue with more sites of the inverted bases. Insertion of a standard bases shown in green font will have a 3'-3' phosphodiester linkage and to the left is the 5' end. 3'-NNNNNNNN-5'--3'-[Inv-dT]-5'--5'-NNNNNNNN-3'

The construct shown above is with a single [Inv-dT] to signify the orientation change point after the standard bases in green font; chemical synthesis starts from the 3' end. Note ALL bases shown in orange font after the first inverted bases towards the left will also be inverted bases to keep the reverse orientation.

The same construct is shown below but with standard orientation bases shown in green font inserted after the inverted base, this will reverse the polarity and thus the oligo will have a 5' and a 3' end. 5'-NNNNNNNN-3'--3'-[Inv-dT]-5'--5'-NNNNNNNN-3'