

Alkyne-PEG4-phosphoramidite

<http://www.lumiprobe.com/p/alkyne-peg4-amidite>

Alkyne-PEG4-phosphoramidite is a tetraethylene glycol phosphoramidite with a terminal triple bond that can be used for the synthesis of various functionalized oligonucleotides. An alkyne fragment in the resulting molecules reacts in Click Chemistry reactions with azide-containing compounds in the presence of copper (I) salts to produce various oligonucleotide conjugates, such as those with dyes, peptides, or glycans. The yield of resulting compounds is rather high, their isolation and purification are often easier than those of molecules produced by the interaction of amino-modified oligonucleotides with activated esters such as those of dyes. Click Chemistry reactions are bioorthogonal because neither terminal alkyne nor azide functional groups usually are found in biomolecules.

A tetraethylene glycol linker in phosphoramidite gives it higher hydrophilic properties and reduces toxicity and immunogenicity of produced conjugates.

Recommendations for using the reagent:

Solvent: Acetonitrile.

Recommended condensation time: Standard, as for natural nucleoside phosphoramidites.

It is recommended to use standard deprotection conditions.

General properties

Appearance:	colorless or yellow oil
Molecular weight:	432.49
CAS number:	1682657-14-2
Molecular formula:	$C_{20}H_{37}N_2O_6P$
IUPAC name:	2-cyanoethyl (3,6,9,12-tetraoxapentadec-14-yn-1-yl) diisopropylphosphoramidite
Solubility:	good in acetonitrile and dichloromethane
Quality control:	NMR 1H and ^{31}P , HPLC-MS (95%)
Storage conditions:	Storage: 12 months after receipt at $-20^{\circ}C$ in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate.

Oligo synthesis details

Diluent:	acetonitrile
Coupling conditions:	standard coupling, identical to normal nucleobases
Deprotection conditions:	identical to protected nucleobases