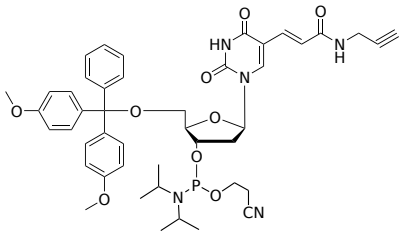
Alkynyl-dT-Phosphoramidite

Catalog Number: 6214, 6215
Unit Size: 50 umoles, 100 umoles

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	6 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	837.91
Soluble In	MeCN
Chemical Structure	

Spectral Properties

Excitation Wavelength	N/A
Emission Wavelength	N/A

Applications

Alkynyl-dT-Phosphoramidite is an excellent building block for introducing an alkyne group into an oligo via dT. Oligonucleotides bearing a single nucleosidic alkyne group can be readily modified with 2-5 equivalents of a tag-azide (e.g., a fluorescent dye azide). After the addition of complexed Cu(I), complete conversion to the labelled oligo can be achieved typically between 30 min and a few hours. After a simple precipitation step, labelled oligonucleotides can be recovered in high yields. The copper(I)-catalyzed azide-alkyne cycloaddition (CuAAC) reaction between azides and alkynes to form 1,2,3-triazoles, as reported by Sharpless, is exquisitely regioselective and efficient at even the mildest conditions. The use of this method for DNA modification was somewhat hindered by the fact that copper ions damage DNA, typically yielding strand breaks. As these problems have now been overcome by the use of copper(I)-stabilizing ligands (e.g., tris(benzyltriazolylmethyl)amine, TBTA3), the CuAAC reaction is now increasingly used to functionalize alkyne-modified DNA nucleobases with extremely high efficiency.