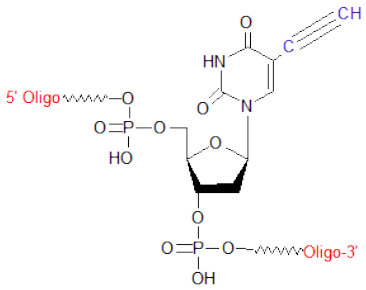
5-Ethynyl-dU TIPS (Alkyne 5EdU TIPS)

Category	Click Chemistry
Modification Code	5E-dU-TIPS
Reference Catalog Number	26-6615
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	314.19



5-Ethynyl-dU (5EdU)
[26-6615-XX]

Click here for a complete list of Click Chemistry Oligo Modifications

5-Ethynyl-dU offers convenient click conjugation with an azide to generate a label rigidly attached to one of the oligonucleotide bases. The alkyne group is separated from the oligo by an 11-atom spacer arm, which serves to reduce steric interaction between the reactive group and the oligo. The presence of the alkyne allows the user to use Click Chemistry (a [3+2] cycloaddition reaction between alkynes and azides, using copper (I) iodide as a catalyst) to conjugate it to a variety of azide-containing labels/tags (e.g., fluorescent dyes, biotin, or oligos, with extremely high regioselectivity and efficiency (1,2). When conjugation to an azide-oligo is desired, preparation of the azide-oligo can be achieved using either an Azidobutyrate NHS Ester or the 5'-Bromohexyl modifier (see their respective tech sheets for details). Click chemistry can be used to form short, cyclic oligos that can be used as research tools in various biophysical and biological studies (3). In particular, they have considerable potential for in vivo work, as cyclic oligos are known to be very stable in serum for up to several days.

Intellectual Property. baseclick GmbH has been granted the following patents (1-3) besides its further patent applications (4-5). |1. WO 2006/117161 (New labelling strategies for the sensitive detection of analytes)|2. WO 2008/952775 (Click chemistry for the production of reporter molecules)|3. WO 2010/115957 (Click Chemistry on heterogeneous catalysts)|4. PCT/EP 2013/064610 (Anandamide-modified nucleic molecules)|5. PCT/EP 2015/056007 (Self-assembly of DNA Origami: a diagnostic tool)|baseclick GmbH holds a worldwide exclusive license for granted patent application|WO 03/101972 (Copper-catalysed ligation of azides and acetylenes for the nucleic acid field) in the area of diagnostics and research. As Glen Research and baseclick are partners, Glen Research is now able to help in sublicensing this outstanding technology. Gene Link purchases this product from Glen Research for custm oligo synthesis.

References

1. Huisgen, R. *Angew. Chem. Int. Ed.* (1963), **2**: 565-568.
2. Rostovtsev, V.V., Green, L.G., Fokin, V.V., Sharpless, K.B. A Stepwise Huisgen Cycloaddition Process: Copper(I)-Catalyzed Regioselective Ligation of Azides and Terminal Alkynes.

Angew. Chem. Int. Ed. (2002), **41**: 2596-2599.
3. Kumar, R., El-Sagheer, A., Tumpane, J., Lincoln, P., Wilhelmsson, L.M., Brown, T. Template-Directed Oligonucleotide Strand Ligation, Covalent Intramolecular DNA Circularization and Catenation Using Click Chemistry. *J. Am. Chem. Soc.* (2007), **129**: 6859-6864.