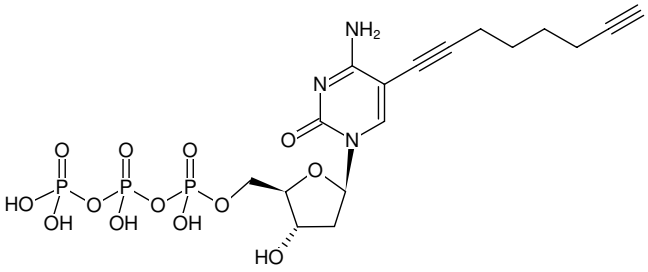
DATA SHEET

Jena Bioscience

C8-Alkyne-dCTP

5-(Octa-1,7-diynyl)-2'-deoxycytidine 5'-triphosphate, Sodium salt

Cat. No.	Amount
CLK-T06-S	10 µl (100 mM)
CLK-T06-L	5 x 10 µl (100 mM)
CLK-T06-XL	100 µl (100 mM)



Structural formula of C8-Alkyne-dCTP

For research use only.

Please centrifuge briefly before opening (volume ≤2 ml).

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Short term exposure (up to 1 week cumulative) to ambient temperature possible.

Shelf Life: 12 months after date of delivery

Molecular Formula: $C_{17}H_{24}N_3O_{13}P_3$ (free acid)

Molecular Weight: 571.31 g/mol (free acid)

Exact Mass: 571.05 g/mol (free acid)

Purity: ≥ 95 % (HPLC)

Form: solution in water

Color: colorless to slightly yellow

Concentration: 100 mM - 110 mM

pH: 7.5 ±0.5

Spectroscopic Properties: $\varepsilon_{292\ nm}$ 9.5 L mmol^{-1} cm^{-1} (Tris-HCl pH 7.5)

Applications:
Incorporation into DNA by **PCR** with family B polymerases (Pwo, Deep Vent *exo*$^-$ or KOD XL)[1,2]

Incorporation into DNA by **Primer Extension** with family A polymerase *Taq* and family B polymerases (Pwo, Deep Vent *exo*$^-$ or KOD XL)[1]

Incorporation into DNA by **3'-End Labeling** with Terminal deoxynucleotidyl Transferase(TdT)[3]

The resulting ethynyl-functionalized DNA can subsequently be processed via Cu(I)-catalyzed click chemistry that offers the choice

- to introduce a Biotin group (via Azides of Biotin) for subsequent purification tasks
- to introduce fluorescent group (via Azides of fluorescent dyes) for subsequent microscopic imaging
- to crosslink the DNA to Azide-functionalized biomolecules e.g.proteins

Presolski *et al.*[4] and Hong *et al.*[5] provide a general protocol for Cu(I)-catalyzed click chemistry reactions that may be used as a starting point for the set up and optimization of individual assays.

Related Products:
Copper (II)-Sulphate ($CuSO_4$), #CLK-MI004
Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA), #CLK-1010
Sodium Ascorbate (Na-Ascorbate), #CLK-MI005

Selected References:

[1] Gierlich *et al.* (2007) Synthesis of Highly Modified DNA by a Combination of PCR with Alkyne-Bearing Triphosphates and Click Chemistry. *Chem. Eur. J.* **13**:9486.

[2] Burley *et al.* (2006) Directed DNA Metallization. *J. Am. Chem. Soc.* **128 (5)**:1398.

[3] Sorensen *et al.* (2013) Enzymatic Ligation of Large Biomolecules to DNA. *ACSnano* **7 (9)**:8098.

[4] Presolski *et al.* (2011) Copper-Catalyzed Azide-Alkyne Click Chemistry for Bioconjugation. *Current Protocols in Chemical Biology* **3**:153.

[5] Hong *et al.* (2011) Analysis and Optimization of Copper-Catalyzed Azide-Alkyne Cycloaddition for Bioconjugation. *Angew. Chem. Int. Ed.* **48**:9879.