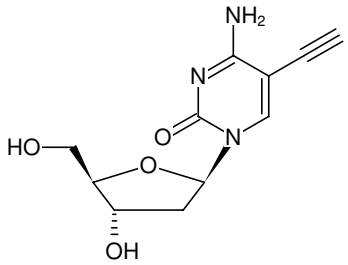
DATA SHEET

Jena Bioscience

5-Ethynyl-2'-deoxycytidine (5-EdC)

5-Ethynyl-2'-deoxycytidine

Cat. No.	Amount
CLK-N003-10	10 mg



Structural formula of 5-Ethynyl-2'-deoxycytidine (5-EdC)

For research use only.

Shipping: shipped at ambient temperature

Storage Conditions: store at -20 °C

Additional Storage Conditions: store dry and under inert gas

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

Shelf Life: 12 months after date of delivery

Molecular Formula: $C_{11}H_{13}N_3O_4$

Molecular Weight: 251.24 g/mol

Exact Mass: 251.09 g/mol

CAS#: 69075-47-4

Purity: ≥ 99 % (HPLC)

Form: solid

Color: off-white

Solubility: DMSO

Spectroscopic Properties: λ_{max} 291 nm, ε 8.5 L $mmol^{-1}$ cm^{-1} (Tris-HCl pH 7.5)

Applications:
DNA synthesis monitoring[1]

Description:
Ethynyl-labeled deoxycytidine (5-EdC) can be used as a replacement for BrdU (5-Bromo-2'-deoxyuridine) to measure *de novo* DNA synthesis during the S-phase of the cell cycle. 5-EdC is cell-permeabel and incorporates into replicating DNA instead of its natural analog thymidine.
The resulting ethynyl-functionalized DNA can subsequently be detected via Cu(I)-catalyzed click chemistry that offers the choice to introduce a Biotin group (Azides of Biotin) for subsequent purification tasks or a fluorescent group (Azides of fluorescent dyes) for subsequent
microscopic imaging [1].

Presolski *et al.*[2] and Hong *et al.*[3] 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:
5-Ethynyl-2'-deoxy-uridine (5-EdU), #CLK-N001
Copper (II)-Sulphate ($CuSO_4$), #CLK-MI004
Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA), #CLK-1010
Sodium Ascorbate (Na-Ascorbate), #CLK-MI005

Selected References:
[1] Guan *et al.* (2011) Intracellular detection of cytosine incorporation in genomic DNA by using 5-ethynyl-2'-deoxycytidine. *ChemBioChem* **2 (14)**:2184.

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

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