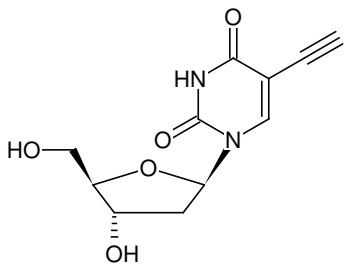
DATA SHEET

Jena Bioscience

5-Ethynyl-2'-deoxyuridine (5-EdU)

5-Ethynyl-2'-deoxyuridine

Cat. No.	Amount
CLK-N001-25	25 mg
CLK-N001-100	100 mg
CLK-N001-500	500 mg
CLK-N001-5000	5 g



Structural formula of 5-Ethynyl-2'-deoxyuridine (5-EdU)

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: $C_{11}H_{12}N_2O_5$

Molecular Weight: 252.23 g/mol

Exact Mass: 252.07 g/mol

CAS#: 61135-33-9

Purity: ≥ 98 % (HPLC)

Form: solid

Color: white to off-white

Solubility: DMSO, up to 200 mM (at room temperature) in 1 x PBS or water by heating the obtained suspension for 1 minute by 70 °C

Spectroscopic Properties: λ_{max} 288 nm, ε 12.0 L mmol^{-1} cm^{-1} (Tris-HCl pH 7.5)

Applications:
DNA synthesis monitoring[1-5]

Description:
5-EdU (5-Ethynyl-2'-deoxyuridine) 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-EdU is cell permeable 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 (via Azides of Biotin) for subsequent purification tasks or a fluorescent group (via Azides of fluorescent dyes) for subsequent microscopic imaging [1-5].

Presolski *et al.*[6] and Hong *et al.*[7] 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-deoxycytidine (5-EdC), #CLK-N003
Copper (II)-Sulphate ($CuSO_4$), #CLK-MI004
Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA), #CLK-1010
Sodium Ascorbate (Na-Ascorbate), #CLK-MI005

Selected References:
[1] Salic *et al.* (2008) A chemical method for fast and sensitive detection of DNA synthesis in vivo. *Proc. Natl. Acad. Sci. USA* **105 (7)**:2415.

[2] Li *et al.* (2010) Fluorogenic click reaction for labeling and detection of DNA in proliferating cells. *Biotechniques* **49 (1)**:525.

[3] Chehrehasa *et al.* (2009) EdU, a new thymidine analogue for labelling proliferating cells in the nervous system. *J. Neurosci. Methods* **177**:122.

[4] Limsirichaikul *et al.* (2009) A rapid non-radioactive technique for measurement of repair synthesis in primary human fibroblasts by incorporation of ethynyl deoxyuridine (EdU). *Nucleic Acids Res.* **37 (4)**:e31.

[5] Buck *et al.* (2008) Detection of S-phase cell cycle progression using 5-ethynyl-2'-deoxyuridine incorporation with click chemistry, an alternative to using 5-bromo-2'-deoxyuridine antibodies. *Biotechniques* **44 (7)**:927.

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

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