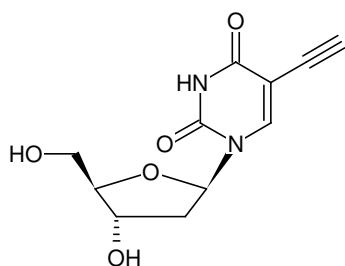




## 5-Ethynyl-2'-deoxyuridine (5-Edu)

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<sub>11</sub>H<sub>12</sub>N<sub>2</sub>O<sub>5</sub>

**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<sub>max</sub> 288 nm, ε 12.0 L mmol<sup>-1</sup> cm<sup>-1</sup> (Tris-HCl pH 7.5)

### Applications:

DNA synthesis monitoring<sup>[1-5]</sup>

### 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<sup>[1-5]</sup>.

Presolski *et al.*<sup>[6]</sup> and Hong *et al.*<sup>[7]</sup> 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<sub>4</sub>), #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.