

## C8-Alkyne-dT-CE-phosphoramidite

<http://cn.lumiprobe.com/p/alkyne-dt-amidite-octadiyne-c8>

C8-Alkyne-dT-CE-phosphoramidite serves as a powerful tool in oligonucleotide synthesis, enabling researchers to create highly functionalized DNA constructs through click chemistry. Its applications span from basic research in molecular biology to advanced therapeutic strategies.

The primary application of C8-Alkyne-dT-CE-phosphoramidite is in the copper-catalyzed azide-alkyne cycloaddition (CuAAC) reaction, commonly referred to as click chemistry. This method allows for the efficient and selective modification of oligonucleotides by attaching azide-containing labels, such as fluorescent dyes or biotin. The reaction typically yields high conversion rates within 30 minutes to 4 hours, making it suitable for rapid labeling of DNA.

C8-Alkyne-dT-CE-phosphoramidite can be used to create dual-labeled or even triple-labeled oligonucleotides. In a typical procedure, a single alkyne-modified nucleotide is first incorporated into the oligonucleotide during solid-phase synthesis. Subsequent click reactions can introduce additional labels, allowing for complex oligonucleotide designs that can be used in applications like multiplexed imaging or targeted delivery systems.

Another significant application is in the development of dual-labeled hydrolysis probes for real-time PCR (TaqMan probes). The alkyne group allows for the incorporation of a quencher at one end and a fluorescent reporter at the other, facilitating sensitive detection of nucleic acids during amplification.

C8-Alkyne-dT-CE-phosphoramidite is also employed in studies involving RNA and DNA hybridization. The presence of an alkyne does not interfere with hybridization, making it possible to design probes that can be easily modified post-synthesis without affecting their binding properties.

In therapeutic applications, oligonucleotides modified with C8-Alkyne-dT-CE can be designed to target specific cellular pathways or deliver therapeutic agents directly to cells. This capability is enhanced through the use of click chemistry to attach drug molecules or other functional groups that facilitate cellular uptake or targeting.

## Recommendations for using the reagent:

**Coupling:** Standard conditions identical to normal nucleobases.

**Deprotection:** Deprotection: remove DMT in standard conditions, typically with 1% DCA or TFA in dry DCM for 1-2 min at 25°C.

**Cleavage:** typically in concentrated ammonium hydroxide for 5 hours at 60°C (or 1 hour for fast-deprotecting amidites). AMA mixture (concentrated aqueous ammonia/40% methylamine 1:1) for 15 min at 65°C.

The C8-Alkyne-dT-CE-phosphoramidite is stable in solution for 1-2 days, so it should be used promptly after preparation to avoid degradation.

外观: 白色固体

分子量: 834.95

CAS 编号: 938186-76-6

溶解度: DCM、乙腈、DMF

质量控制: NMR <sup>1</sup>H、HPLC-MS (95%)、功能测试

储存条件: 收到后在 -20°C 黑暗条件下可保存 12 个月。运输: 室温下最多可保存 3 周。干燥。

法律声明: 本产品仅供研究目的提供和销售。 本产品并未经过食品、药品、医疗器械、化妆品等领域的安全性和效力测试, 且未经明示或暗示授权用于其他任何用途, 包括但不限于体外诊断、人类或动物用途, 以及商业用途。

稀释剂: 无水乙腈

偶联条件: 与正常核碱基相同的标准条件。

切割条件: 在标准条件下, 通常在 25°C 下将 1% DCA 或 TFA 溶于干燥 DCM 中, 反应 1-2 分钟。