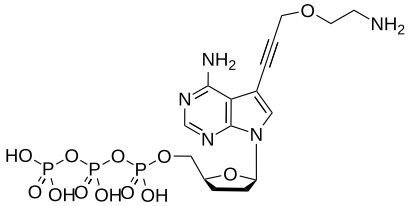
2-Aminoethoxypropargyl ddATP

Catalog Number: 17084
Unit Size: 1 umoles

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	6 months upon receiving

Chemical Properties

Appearance	Liquid off white
Molecular Weight	571.31
Soluble In	Water
Chemical Structure	

Spectral Properties

Excitation Wavelength	N/A
Emission Wavelength	N/A

Applications

Sanger method is one of the most reliable and earliest DNA sequencing methods. DNA is synthesized from four deoxynucleotide triphosphates (dNTPs). Each new nucleotide is added to the 3′ -OH group of the last dNTP added. Dideoxythymidine triphosphates (ddTTPs) can be added to the growing DNA strand but when it is, chain elongation stops because there is no 3′ -OH for the next nucleotide to be attached to. The DNA to be sequenced is prepared as a single strand. This template DNA is supplied with a mixture of dATP, dGTP, dCTP and dTTP in ample quantities. A mixture of all four dideoxynucleotides (ddATP, ddGTP, ddCTP and ddTTP), each present in limiting quantities and each labeled with a "tag" that fluoresces a different color, are added. Because all four normal nucleotides are present, chain elongation proceeds normally until, by chance, DNA polymerase inserts a ddNTP (instead of the normal dNTPs). If the ratio of normal nucleotide to the dideoxy versions is high enough, some DNA strands will succeed in adding several hundred nucleotides before insertion of the ddNTPs halts the process. At the end of the incubation period, the fragments are separated by length from longest to shortest. The resolution is so good that a difference of one nucleotide is enough to separate that strand from the next shorter and next longer strand. Each of the four ddNTPs fluoresces a different color when illuminated by a laser beam and an automatic scanner provides a printout of the sequence. These ddATP, ddGTP, ddCTP and ddTTP amine derivatives are the essential building blocks for developing Sanger sequencing reagents.