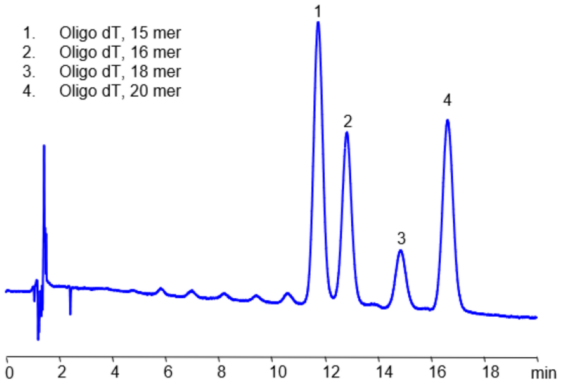
HPLC Method for Analysis of Mixture of dT Oligonucleotides on BIST A Column



Column:	BIST A
Column size:	4.6 × 100 mm, 5 µm
Column part number:	TA-46.100.0510.C
Mobile phase:	Gradient MeCN - 50-30%, 20 min
Buffer:	TMEDA acetate - 20 mM pH 4.0
Flow rate:	1.0 mL/min
Detection:	UV 260 nm

Separation type: Bridge Ion Separation Technology, or BIST™ by SIELC Technologies

Oligonucleotides dT, also known as deoxythymidine oligonucleotides, are short, single-stranded DNA molecules composed of repeating units of deoxythymidine. They are commonly used in molecular biology techniques such as PCR (polymerase chain reaction), cDNA synthesis, and DNA sequencing.

In PCR, oligonucleotides dT are often used as primers to initiate DNA synthesis. They bind to the complementary strand of DNA at the 3′ end and serve as the starting point for DNA polymerase to extend the new strand.

In cDNA synthesis, oligonucleotides dT are used to prime reverse transcription of mRNA into cDNA. They bind to the poly(A) tail of mRNA, which is composed of multiple consecutive adenosines, and initiate the reverse transcription process.

Overall, oligonucleotides dT are a useful tool in molecular biology for a variety of applications where specific DNA or cDNA sequences need to be targeted and amplified.

Using SIELC's newly introduced BIST™ method, this oligonucleotide can be retained on a negatively-charged, cation-exchange BIST™ A column. There are two keys to this retention method: 1) a multi-charged, positive buffer, such as TMEDA formate, which acts as a bridge, linking the negatively charged dye to the negatively-charged column surface and 2) a mobile phase consisting mostly of organic solvent (such as MeCN) to minimize the formation of a solvation layer around the charged analytes. Using this new and unique analysis method, oligonucleotide can be separated, retained, and detected at 260 nm.

Please read more on oligonucleotides analysis by HPLC in our April's 2023 newsletter .

AugustaChrom - Dr. Roland Kießwetter
Tel.: +49 821 599 783 70
Fax: +49 821 599 783 71
E-Mail: info@hplc-shop.de

Method Parameters

Column	BIST A, 4.6 x 100 mm, 5 µm, 100 Å, surface coated
Mobile Phase	Gradient MeCN – 50-30%, 20 min
Buffer	TMEDA acetate pH 4.0 – 20 mM
Flow Rate	1.0 mL/min
Detection	UV 260 nm

Quelle: https://sielc.com/hplc-method-for-analysis-of-doligo