

Shodex
HPLC Columns



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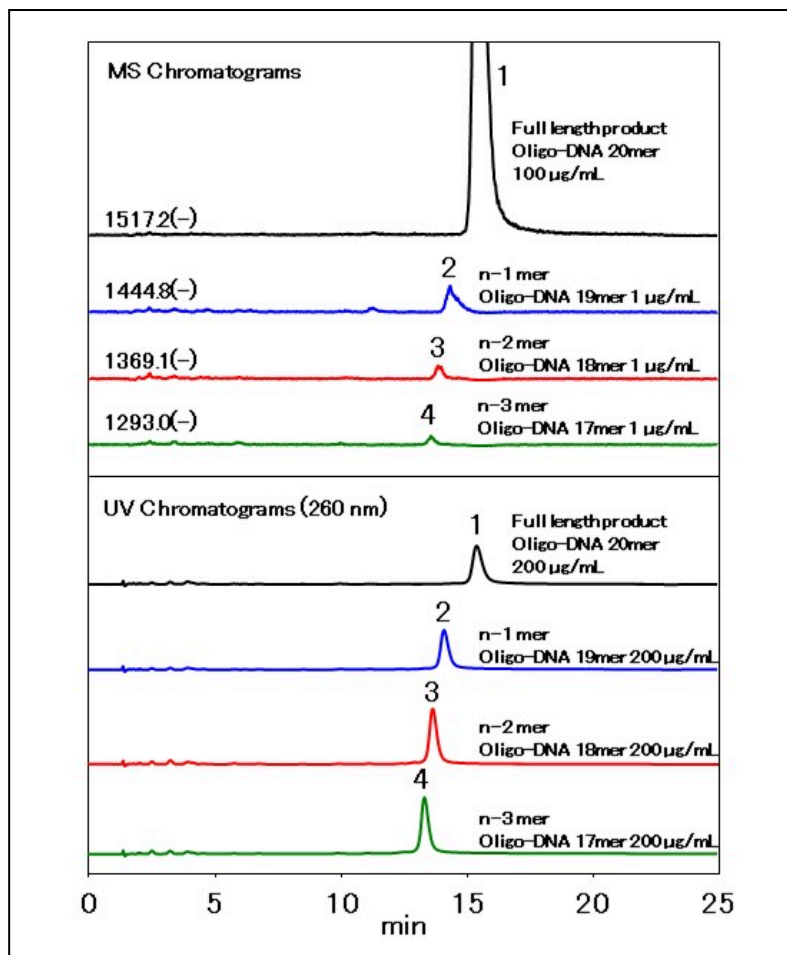
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In R&D and QC of nucleic acid drugs such as antisense oligonucleotides (ASO) require development of analytical methods that separate the target synthetic oligonucleotide from its impurities as much as possible. In this application, four compounds were analyzed using HILICpak VN-50 2D, a polymer-based HILIC column. The four compounds were the target synthetic oligo-DNA (20mer; n nucleotides) and its three analogs with 1 to 3 truncated nucleotides (19mer, 18mer, and 17mer; n-1, n-2, and n-3 nucleotides respectively). Under HILIC mode, the higher the hydrophilicity, the stronger the retention becomes. Thus, the four oligo-DNAs eluted in the order of smaller to larger oligomer. The application developed here does not require a use of ion-pairing reagent nor highly concentrated salt in the eluent. Therefore, it is suitable for LC/MS analysis of oligonucleotides.

Sample: Synthesized oligo-DNAs (crude), 1 μ L

1. 20mer (n),
CTTCTCATGGTTCTTCGGAA
2. 19mer (n-1),
TTCTCATGGTTCTTCGGAA
3. 18mer (n-2),
TCTCATGGTTCTTCGGAA
4. 17mer (n-3),
CTCATGGTTCTTCGGAA



Column	: Shodex HILICpak VN-50 2D (2.0 mm I.D. x 150 mm)
Eluent	: (A); 50 mM HCOONH ₄ aq./ (B); CH ₃ CN Linear gradient; (B %) 62 to 56 % (0 to 10 min), 56 % (10 to 20 min), 56 to 62 % (20 to 20.01 min), 62 % (20.01 to 25 min)
Flow rate	: 0.2 mL/min
Detector	: UV (260 nm) (small cell volume), ESI-MS (SIM Negative)
Column temp.	: 60 °C

Sample Name Index

Oligodeoxyribonucleotide, Oligo-DNA

Product Name Index

VN-50 2D (HILICpak)

Applications

High Sensitive Analysis of Synthetic Oligo-DNAs by LC/MS (Comparison between VN-50 1D and VN-50 2D)

LC/UV/MS Analysis of Oligo-DNA (VN-50 2D)

Analysis of Phosphorothioated Oligo-DNA (VN-50 2D)

Analysis of Oligo-DNAs (VN-50 2D)