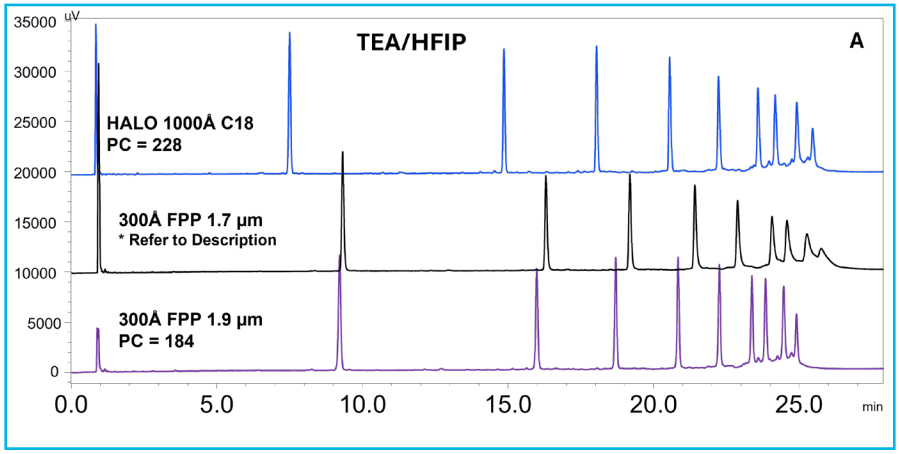
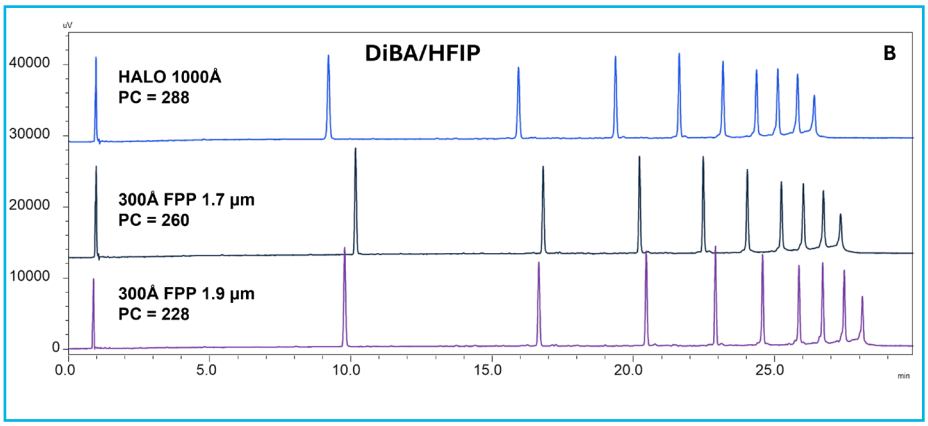
# Advantage of HALO 1000 Å over Competitor Columns for Oligonucleotides






## TEST CONDITIONS:

**Column:** HALO 1000 Å OLIGO C18, 2.7 µm, 2.1 x 100 mm
**Mobile Phase:**
**Plot A**
**A:** 15mM TEA/50mM HFIP pH - 8.9
**B:** 50/50 Water/ACN
**Plot B**
**A:** (90)/5/5 (10mM DiBA/100mM HFIP)/MeOH/ACN
**B:** 50/50 Water/ACN

| **Gradient:** | Time | %B |
|---|---|---|
| | 0.0 | 5 |
| | 30.0 | 12 |

**Flow Rate:** 0.4mL/min.

**Back Pressure:** 1000 Å HALO® - 241 bar
300 Å FPP 1.7µm - 540 bar
300 Å FPP 1.9µm - 286 bar
**Temperature:** 60 ºC
**Injection:** 1.0 µL of ssDNA (10µg/mL)
**Sample Solvent:** 10mM Tris/1mM EDTA
**Wavelength:** PDA, 260 nm
**Flow Cell:** 1 µL
**Data Rate:** 40 Hz
**Response Time:** 0.05 sec.
**LC System:** Shimadzu Nexera X2

Separations of oligonucleotides using the HALO 1000 Å superficially porous particle (SPP) material were compared to those achieved with commercially available wide-pore (300 Å) sub-2 µm silica particles. The HALO 1000 Å OLIGO C18 SPP demonstrated modest improvements in peak widths under TEA/HFIP conditions and exhibited a greater gradient range (DeltaT) between the 20- and 100-base oligonucleotides, contributing to a higher peak capacity (PC) along with lower backpressure. Across all columns, peak shapes for larger oligonucleotides improved using the more hydrophobic DiBA/HFIP mobile phase. The enhanced peak capacities observed with the 1000 Å SPP material were attributed to both narrower peak widths at 50% height and the broader gradient span of the separation.

**Due to the heavily tailed peak 10, peak capacity could not be correctly calculated.*

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