Comparison of Conventional, Sub-2-μm, and Superficially Porous (Fused-Core®) Particles for Nanobore LC/MS

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Introduction
HPLC columns packed with sub-2-μm size particles are readily available from a variety of suppliers and have shown benefits of speed and resolution when packed in conventional columns with internal diameters of 1 or 2 mm. However, questions remain about whether these particles offer any significant advantages, or are even preferable to other types of stationary phase particles for typical nanobore LC/MS applications when optimizing either peak capacity or analysis time, or both. This paper will review three different types of stationary phase particles: 3.5 μm totally porous, sub-2 μm particles (conventional), 1.8 μm totally porous (sub-2 μm), and 2.7 μm superficially porous (Fused-Core®) and discuss advantages and disadvantages of each for nanobore LC/MS.

Materials & Methods
INSTRUMENTATION:
- Eksigent NanoLC –2D
- Leap HTC autosampler
- Thermo LCQ Deca 3-d Ion Trap model DPV -150

CONCLUSIONS:
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柱子填充时，可以用更小的柱径来提高峰容量，因为在更小的柱径下，柱的体积会减小。然而，这会降低柱的性能，因为小柱的柱体积会减小。因此，从柱径的限制来看，小柱的柱体积限制了柱的性能。在小柱和中柱中，柱径的限制在使用常规的LC/MS设备时，虽然有一些柱的峰容量限制。