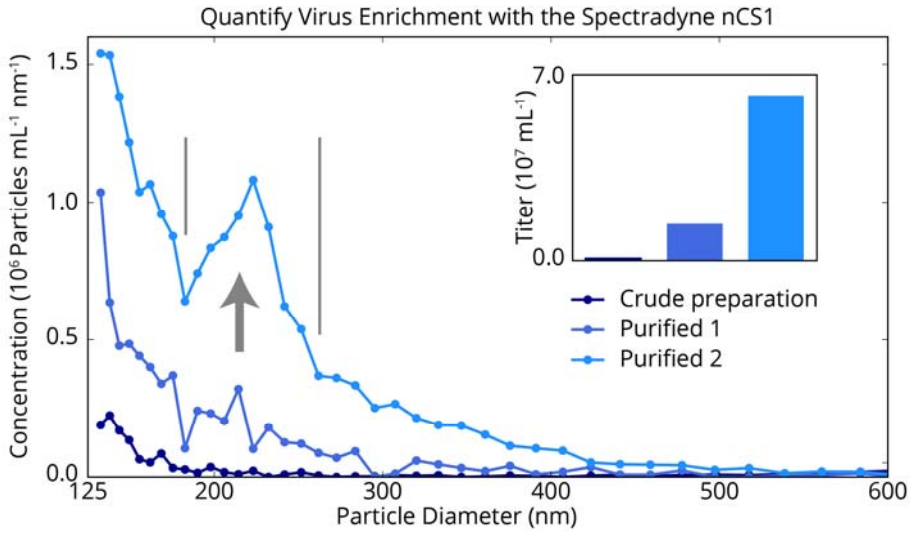
Analysis of Gene Therapy Vectors and Nanomedicines with the Spectradyne nCS1

Accurate quantification of gene therapy vectors and nanomedicines is critical at all stages of research and product development—whether for characterizing a production step or obtaining an accurate titer before assessing bioactivity. Spectradyne's nCS1 quantifies all types of nanoparticle-based therapeutics quickly and accurately, and requires only 3 microliters of the sample per measurement.

Figure 1 shows nCS1 measurements of a proprietary virus-based drug product as it progresses through three stages of purification. While each stage of purification increases the concentration of particles over a broad size range, a clear enrichment of virus product is obtained with the second stage. These measurements provided the manufacturer of this product with a highly detailed picture of the purification process, and insights for optimization that could not have been obtained with any other method.



A virus-based drug product measured by the nCS1 after various stages of purification. Enrichment of the virus is clearly observed after the second purification step, and could not be measured so directly and practically using any other technology. Such high-resolution and quantitative measurement as these cannot be obtained with other technology, and enable more effective analysis of process parameters at all stages of the drug development process.

Because the nCS1 uses an electrical method, not light scattering, to count and size nanoparticles it measures all particle types equally well. As a result, researchers count on the nCS1 every day to measure diverse range of gene therapy vectors and other nanomedicines, including:

- Lentivirus, retrovirus, HSV and others
- Lipid nanoparticles (LNPs)
- Liposomes
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- Polymeric nanoparticles
- Milled drug particles (API crystals)

The nCS1 provides powerful insights to these researchers that cannot be obtained by any other method. Contact us today to learn how Spectradyne's nCS1 can help advance your gene therapy or nanomedicine science.

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