

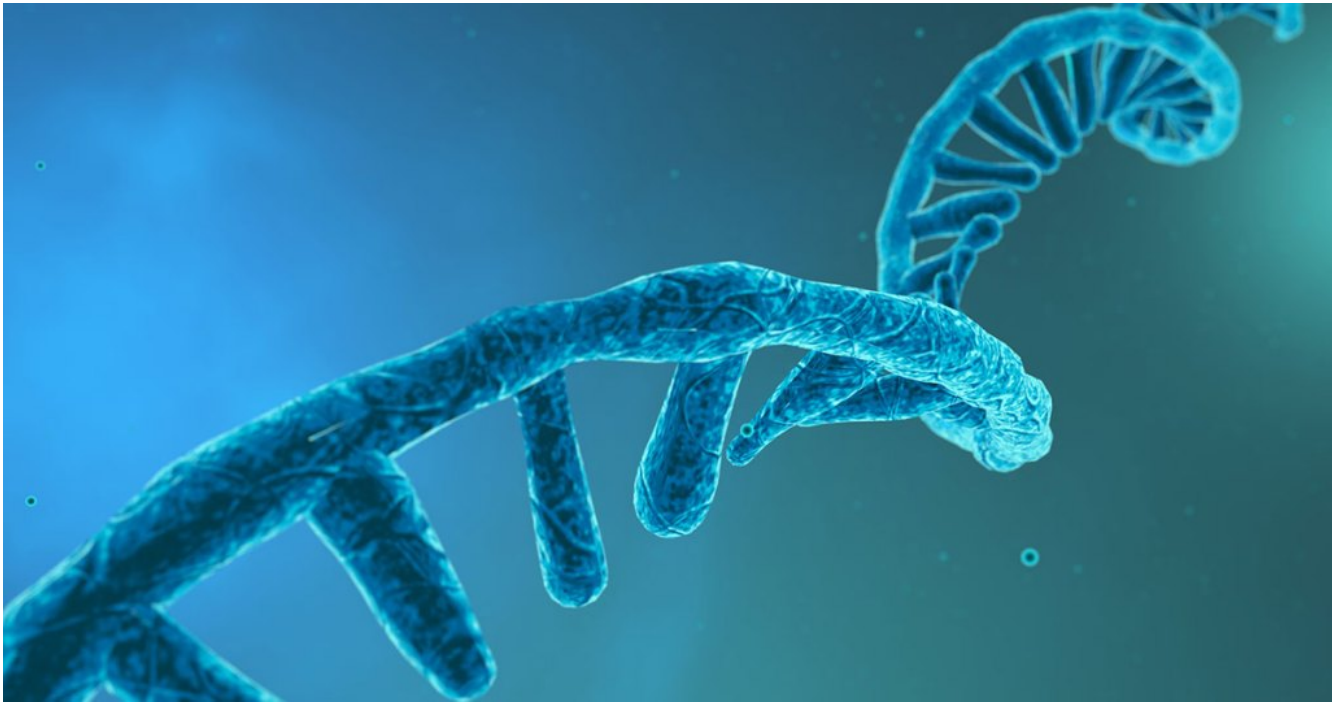
In the intricate landscape of gene therapy, precision is paramount. As scientists delve deeper into the possibilities of Adeno-Associated Virus (AAV) and messenger RNA (mRNA) therapies, the need for meticulous separation methods becomes apparent. High-Performance Liquid Chromatography (HPLC) columns have emerged as indispensable tools, offering a level of accuracy that is transforming the field of gene therapy.



HPLC is a powerful analytical technique used to separate, identify, and quantify components in a mixture, and with its diverse stationary phases and precise separation capabilities, it has become instrumental in isolating AAV vectors and mRNA molecules with unparalleled accuracy.

Columns, tailored for viral vector purification, allow scientists to isolate AAV vectors efficiently. By exploiting the unique physical and chemical properties of AAVs, these columns enable researchers to obtain highly purified viral particles, ensuring the safety and efficacy of gene therapies. In this [application note](#), we profile denatured and dissociated capsid proteins from AAV5 and AAV9, via analysis with LC-MS using a [Biozen™ Intact XB-C8](#) reversed-phase

column.



mRNA separation presents its own set of challenges due to its fragile nature. HPLC columns, designed to handle sensitive biological molecules, facilitate the isolation of intact and high-quality mRNA. This purity is crucial for developing mRNA-based therapies, including vaccines and targeted gene therapies. In this [application note](#), mRNA oligonucleotides strands of 1250 nucleotides were enzymatically digested using RNase H followed by injection into a [Biozen Oligo](#) reversed-phase column. We demonstrate the ability to distinguish a naturally degraded poly A tail with single nucleotide resolution through Liquid Chromatography (LC) and High-Resolution Mass Spectrometry (HRMS).

In the dynamic realm of gene therapy, the role of HPLC columns in separating AAV and mRNA cannot be overstated. Their precision and reliability empower scientists to push the

boundaries of what is possible, bringing us closer to transformative gene therapies. If you need help finding solutions to your HPLC gene therapy needs, [get in touch with one of our Technical Specialists](#).

Other resources you might be interested in are listed below:

- [Peptide Mapping of Adeno-Associated Virus Capsid Proteins Application Note](#)
- [mRNA Cap Purity Analysis on a Biozen Oligo Column Application Note](#)
- [Biopharmaceutical Chromatography Solutions Guide](#)
- [Biozen Oligo LC Column Brochure](#)
- [Biozen dSEC-2 Product Guide](#)

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