

Analysis of AAV payload by svAUC – GMP compliant

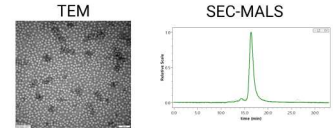


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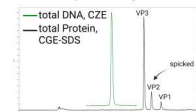
AAV Payload

Adenosine-associated viruses (AAV) are used as systems for therapeutic payload delivery to treat cancer and hereditary diseases. The ratio of AAVs filled with the intended payload compared to empty, partially, and overfilled capsids, is a critical quality attribute (CQA)^{1,2}. The analytical gold standard, sedimentation velocity analytical ultracentrifugation (svAUC) separates particles of the same size based on their molecular mass and density. Owing to its outstanding resolution, svAUC overcomes the limitation of orthogonal techniques to resolve partial from full and empty capsids. In addition, svAUC allows for characterization of AAV samples in their native buffer, without a solid matrix (SEC) or freezing protocol (cryo-TEM) involved. During the centrifugation experiment, the absorbance at 260 and 280 nm is recorded, which after data fitting and peak integration allows the species to be identified and the relative content to be determined².

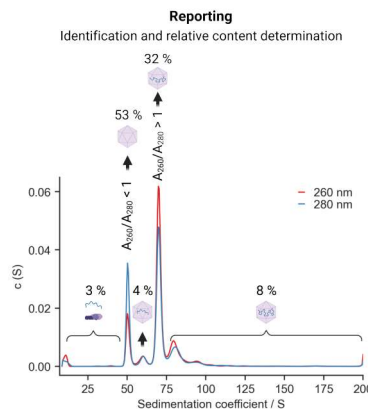
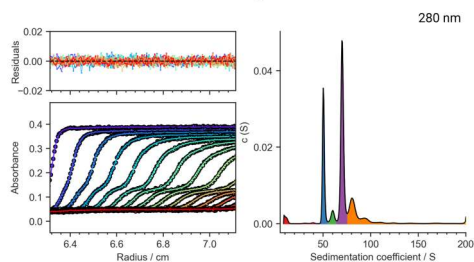
Complementary techniques at Solvias



Total DNA/protein (HPLC/CE)



Fit and integration



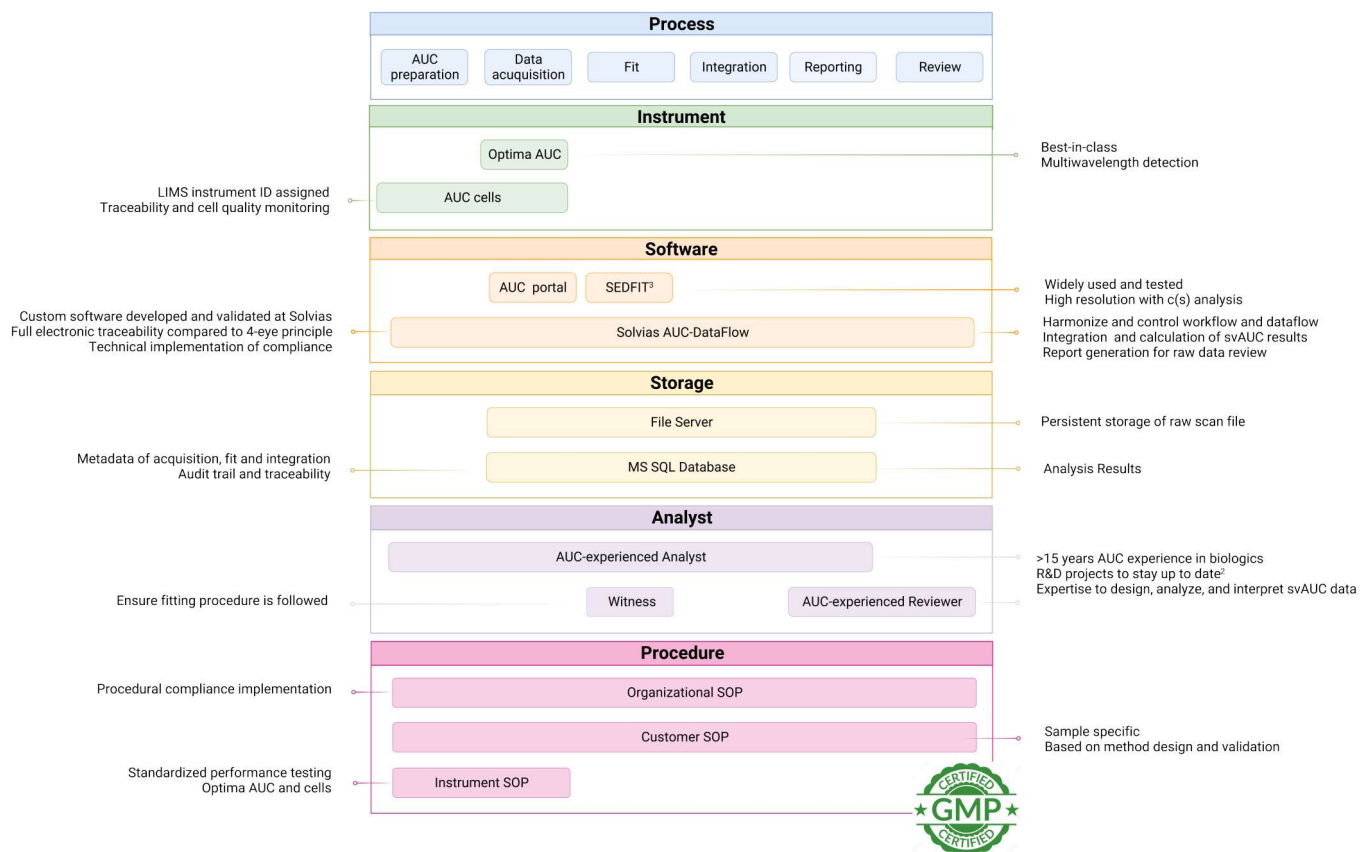
Why svAUC GMP compliant?

- CQA for AAV releases → payload
- Only method able to separate all species
- No comparable orthogonal GMP methods

For more information with regards to complementary techniques and the AAV portfolio of Solvias AG, scan below:



GMP compliant



¹Gimpel A.L., et al., (2021), Analytical methods for process and product characterization of recombinant adeno-associated virus-based gene therapies, *Mol Ther Methods Clin Dev* 17:20:740-754.

²A. Hutanu, D. Bülsterli, et al., (2021), Stronger together: Analytical techniques for recombinant adeno associated virus, *Electrophoresis* 0:1-11.

³P. Schuck, (2000), Size distribution analysis of macromolecules by sedimentation velocity ultracentrifugation and Lamm equation modeling, *Biophysical Journal* 78:1606-1619.