1. Record Nr. UNINA9910739427203321

Titolo	Bioprocess and Analytics Development for Virus-based Advanced Therapeutics and Medicinal Products (ATMPs) / / edited by Saurabh Gautam, Abhilash I. Chiramel, Roland Pach
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-28489-5
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (xvi, 442 pages) : illustrations (some color)
Collana	Biomedical and Life Sciences Series
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Disciplina	615.7924
Soggetti	Virology Biomedical engineering Biotechnology Microbial genetics Analytical biochemistry Therapeutics Biomedical Engineering and Bioengineering Microbial Genetics Analytical Biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1: Bioprocessing and analytical development for virus-based therapeutics -- Chapter 2: Viral Vector Upstream Processing and Clarification -- Chapter 3: Upstream processing of viral therapeutics: From host cell expansion to virus production -- Chapter 4: Leveraging virus biology and host genetic conflicts for cell line development and engineering for virus-based therapeutics -- Chapter 5: Overview of Current Downstream Processing for Modern Viral Vectors -- Chapter 6: Filtration Principles and Techniques for Bioprocessing of Viral Vector–Based Therapeutics -- Chapter 7: Chromatographic purification of viruses: State of the art and current trends -- Chapter 8: Purifying Viral Vectors - A Review of Chromatography Solutions -- Chapter 9: Particle

analytics - Comparative approaches for analysis of viral vectors -- Chapter 10: Phase-Appropriate Potency Assay Development for AAV-based Gene Therapy Products -- Chapter 11: Quantification of virus infectivity – the key assay for the development ofviral therapeutics -- Chapter 12: Product-related impurities in therapeutic virus bioprocessing -- Chapter 13: Process Analytical Technologies (PAT) and Quality by Design (QbD) for bioprocessing of virus-based therapeutics -- Chapter 14: Methods and practical considerations in imaging viral therapeutics -- Chapter 15: Application of NMR Spectroscopy in Viral Assembly Characterization -- Chapter 16: Improved Production Strategies for Oncolytic Measles Viruses as a Therapeutic Cancer Treatment -- Chapter 17: Recent Advancements and Challenges in Recombinant Expression for Commercial Production of Virus Like Particles (VLPs) -- Chapter 18: Oncolytic viruses and viral gene therapy vectors: Principles of safety.

Sommario/riassunto

This book reviews the knowledge, methods and available techniques in the rapidly advancing field of virus based vaccines and gene therapeutics. It also highlights new innovative tools and interdisciplinary techniques for bioprocess development and analytics of viruses and viral vectors. As such, it provides a timely and highly relevant resource, since current advances in pharmaceutical research have seen the rise of vaccines and advanced therapeutics and medicinal products (ATMPs), that rely on the power of viruses. However, developing bioprocesses and analytics required to create this often called “magic bullet” (i.e. gene therapy) remains an extremely challenging and costly task. This book offers strategies for overcoming hurdles and difficulties within in all the necessary steps of viral vector development - from scalability to purification methods and quality control. The book is intended for researchers working in academia or industry, as well as graduate students pursuing a career in virology.