

Article @ Virology

Research Progress on Metrological Management of Commonly Used Instruments and Equipment in the Whole Life Cycle of Viral Vaccines

Guanjie Wang*

National Institutes for Food and Drug Control, Beijing 102629, P. R. China

ABSTRACT

With the continuous advancement of global vaccine research and development and production, the whole life cycle management of viral vaccines has become particularly important. Especially in the process of vaccine research and development, production, quality control and verification, the metrological management of instruments and equipment directly affects the safety and effectiveness of vaccines. At present, although many studies have been conducted on the metrological management of instruments and equipment in vaccine production, there are still some technical challenges and management deficiencies. This paper aims to review the current status and research progress of metrological management of commonly used instruments and equipment in the whole life cycle of viral vaccines, and systematically analyze the metrological requirements, management strategies and technical challenges of key instruments and equipment at different stages. In addition, the article will also explore the latest metrological technology, standardization progress and future development direction. By integrating relevant research results and industry practices at home and abroad, this article provides a theoretical basis and practical guidance for metrological management for vaccine manufacturers and regulatory agencies, in order to promote the improvement of vaccine quality and ensure public health safety.

Copyright©2012-2025 Published by Hong Kong Institute of Biologicals Standardization Limited. All rights reserved.

Article History: Submitted: 18/10/2023; Revised: 24/11/2023; Accepted: 05/12/2023

DOI:10.21092/jav.v12i4.111

Key Words: Viral Vaccine, Whole Life Cycle, Instruments and Equipment, Metrological Management.

* Guanjie Wang, Major in Instrumental analysis and pharmaceutical management,
E-mail: wanggj@nifdc.org.cn Tel.: +86-10-53852042