

Standards for Molecular Testing in Immunohematology, 1st edition

Mainly Translated by Hongjun Gao and Tongmao Zhao
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Established in 1947, the American Association of Blood Banks (AABB) is committed to providing high-quality blood-related products and services, knowledge dissemination, and professional training to blood transfusion clinicians. After 75 years of development, the AABB has become a symbol of authority and excellence in the field of blood transfusion. In 2021, the American Association of Blood Banks changed its name to the Association for the Advancement of Blood & Biotherapies to fulfill a broader mission and readership, while keeping the same abbreviation of AABB.

The AABB has published a series of industry standards, guidelines, books, and journals, which are indispensable reference materials for professionals. At the end of 2021, Mr. Yuping Chen, Executive Director of the International Association of Asia-Pacific Blood Types and Genomics (IAABG), proposed translating and publishing AABB publications in the form of a series of books, in order to facilitate the spread of advanced knowledge and experience from international blood transfusion medicine practitioners to Chinese readers. This proposal was supported by the AABB Publishing Committee, and we are determined to go all out for this ambitious project.

The book in this review is entitled *Standards for Molecular Testing in Immunohematology*, which is composed of the translated versions of three original English works: *Standards for Molecular Testing for Red Cell, Platelet, and Neutrophil Antigens* (5th edition, 2020), *Guidance for Standards for Molecular Testing for Red Cell, Platelet, and Neutrophil Antigens* (5th edition, 2020), and *Introduction to Molecular Immunohematology* (2020). Considering

the relevance and consistency of the contents, we have combined those books together in one translated book and designated the title as *Standards for Molecular Testing in Immunohematology*. It is written with the aim that its readers will use it as a go-to resource for basic theories, methods, and testing standards.

The basic details for each book in their English versions are as follows. Book 1, *Standards for Molecular Testing for Red Cell, Platelet, and Neutrophil Antigens* (5th edition, 2020), outlines requirements for identifying and predicting red cell, platelet, and neutrophil antigens by molecular methods. Book 2, *Guidance for Standards for Molecular Testing for Red Cell, Platelet, and Neutrophil Antigens* (5th edition, 2020), clarifies the difference between requirements and recommendations. The book also describes rationales for standards or examples of how standards may be implemented. Book 3, *Introduction to Molecular Immunohematology* (2020), is an approachable guide to molecular testing as it is related to blood banking and immunohematology. Methods are discussed, allele tables are explained, and nuances are taught so that the reader can better understand and use the available resources. It is also a consolidated reference that supervisors or medical directors can refer to when checking the interpretation of a report from a Reference Laboratory. Students or pathology residents preparing for blood transfusion exams will also find it a useful tool.

At the beginning of 2022, our translation work began. The content of the original English works on genetic testing standards for blood groups is very comprehensive and systematic, but the style of introduction is different from Chinese readers' way of

thinking. To facilitate understanding, we strived to translate it in accordance with the language habits of native Chinese speakers, and referred to the manual *Medical Genetics Terminology* published by the National Science and Technology Terminology Approval Committee in 2021 for professional terminology.

The translated book *Standards for Molecular Testing in Immunohematology* was jointly written by experts from multiple disciplines such as blood group serologists, molecular biologists, and blood transfusion medicine doctors. This book systematically introduces some basic knowledge, terminology, and methods of molecular immunohematology. Readers may find blood group genetics for beginners and tens of clinical cases explained thoroughly. The AABB developed molecular testing standards for red blood cell (RBC), platelet, and neutrophil antigens, and used easy-to-understand language and examples to provide a detailed interpretation of testing standards. There are ten parts: Organization, Resources, Equipment, Supplier and Customer Issues, Process Control, Documents and Records, Deviations and Nonconforming Products or Services, Internal and External Assessments, Process Improvement through Corrective and Preventive Actions, and Facilities and Safety. Each part is important for the whole quality system. These standards have been accepted and promoted by multiple countries, becoming international testing standards. It also provides facility requirements, quality system requirements, operational standards, and detailed information on

identifying target nucleotides encoding RBC, platelet, and neutrophil blood group antigens using molecular methods. The bound volume includes basic and sufficient knowledge, technology, and standards for molecular immunohematology.

Although the targeted readers of this book will be blood group genotyping professionals in hospitals, blood banks, and medicinal laboratories, it can also serve as an introductory guide for blood group serology professionals. Besides, this book can be applied as a reference for establishing blood type genotyping laboratories, discovering new alleles, writing academic papers, and submitting to international academic journals. Altogether, we believe it will be indispensable for researchers in blood transfusion medicine.

We hope readers will find the contents of the *Standards for Molecular Testing in Immunohematology* insightful, informative, and interesting. If there are any typing errors, comments, or advice concerning its publication, please do not hesitate to contact us. As experts in this field, your contribution is greatly appreciated. This book is the first in the IAABG's planned series. The IAABG will continue to translate and publish relevant international publications, and endeavor to deliver professional and concise written works to our readership.

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