

The Immunological Basis for Immunization Series

**Module 22:
Hepatitis B**

Immunization, Vaccines and Biologicals



**World Health
Organization**

The Immunological Basis for Immunization Series

**Module 22:
Hepatitis B**

Immunization, Vaccines and Biologicals



**World Health
Organization**

WHO Library Cataloguing-in-Publication Data

The immunological basis for immunization series: module 22: hepatitis B.

(Immunological basis for immunization series ; module 22)

1.Hepatitis B - immunology. 2.Hepatitis B virus - immunology. 3.Hepatitis B vaccines - therapeutic use. 4.Immunization. I.World Health Organization. II.Series.

ISBN 978 92 4 150475 1

(NLM classification: WC 536)

© World Health Organization 2011

All rights reserved. Publications of the World Health Organization are available on the WHO web site (www.who.int) or can be purchased from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 3264; fax: +41 22 791 4857; e-mail: bookorders@who.int).

Requests for permission to reproduce or translate WHO publications –whether for sale or for non-commercial distribution– should be addressed to WHO Press through the WHO web site (www.who.int/about/licensing/copyright_form/en/index.html).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Printed in Switzerland

**The Department of Immunization, Vaccines and Biologicals
thanks the donors whose unspecified financial support
has made the production of this document possible.**

This module was produced for Immunization, Vaccines and Biologicals, WHO, by:
Koen Van Herck (MD, PhD) and Pierre Van Damme (MD, PhD) at the Centre for the
Evaluation of Vaccination, Vaccine and Infectious Disease Institute,
a WHO Collaborating Centre for the Prevention and Control of Infectious Diseases,
based at the University of Antwerp, Belgium.

Printed in December 2012

**Copies of this publication as well as additional materials
on immunization, vaccines and biological may be requested from:**

World Health Organization
Department of Immunization, Vaccines and Biologicals
CH-1211 Geneva 27, Switzerland
• Fax: + 41 22 791 4227 • Email: vaccines@who.int •

© World Health Organization 2010

All rights reserved. Publications of the World Health Organization can be obtained from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel: +41 22 791 3264; fax: +41 22 791 4857; email: bookorders@who.int). Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to WHO Press, at the above address (fax: +41 22 791 4806; email: permissions@who.int).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

The named authors alone are responsible for the views expressed in this publication.

Printed by the WHO Document Production Services, Geneva, Switzerland

Contents

| | |
|---------------------------------------------------------------------|------------|
| <i>Abbreviations and acronyms</i> | <i>v</i> |
| <i>Preface.....</i> | <i>vii</i> |
| 1. The organism, the disease and the vaccines..... | 1 |
| 1.1 <i>Hepatitis B virus</i> | <i>1</i> |
| 1.2 <i>Hepatitis B disease</i> | <i>2</i> |
| 1.3 <i>Treatment</i> | <i>4</i> |
| 1.4 <i>Epidemiology.....</i> | <i>4</i> |
| 1.5 <i>Hepatitis B vaccines.....</i> | <i>5</i> |
| 2. The response to immunization..... | 10 |
| 2.1 <i>Description of the serological response</i> | <i>10</i> |
| 2.2 <i>Determinants of the immune response to immunization.....</i> | <i>10</i> |
| 2.3 <i>Duration of immunity.....</i> | <i>12</i> |
| 2.4 <i>Vaccine efficacy.....</i> | <i>13</i> |
| 2.5 <i>Booster vaccine requirements.....</i> | <i>14</i> |
| 3. Future prospects | 15 |
| 3.1 <i>Discussion (research needs).....</i> | <i>15</i> |
| References | 17 |

Abbreviations and acronyms

| | |
|------------------|----------------------------------------------------------------|
| ALT (SGPT) | alanine aminotransferase (serum glutamic pyruvic transaminase) |
| BCG | bacille Calmette-Guérin (vaccine) |
| CDC | Centers for Disease Control and Prevention (US) |
| DNA (cccDNA) | deoxyribonucleic acid (covalently closed circular DNA) |
| DTP | diphtheria-tetanus-pertussis (vaccine) |
| EPI | Expanded Programme on Immunization |
| GACVS | Global Advisory Committee on Vaccine Safety |
| HAART | highly active antiretroviral therapy |
| HBcAg (anti-HBc) | (antibody to) hepatitis B core antigen |
| HBeAg (anti-HBe) | (antibody to) hepatitis B e antigen |
| HBIG | hepatitis B immunoglobulins (passive immunization) |
| HBsAg (anti-HBs) | (antibody to) hepatitis B surface antigen |
| HBV | hepatitis B virus |
| HCC | hepatocellular carcinoma |
| Hib | Haemophilus influenzae type b |
| HIV | human immunodeficiency virus |
| Ig | immunoglobulin (IgM) |
| MHC | major histocompatibility complex |
| OCC | out of the cold chain |
| OPV | oral polio vaccine |
| ORF | open reading frame |
| PATH | Program for Appropriate Technology in Health |
| PE | protective efficacy |
| RNA (mRNA) | ribonucleic acid (messenger RNA) |
| SAGE | Strategic Advisory Group of Experts (on immunization) |
| UNICEF | United Nations Children's Fund |
| VVMs | vaccine vial monitors |
| WHO | World Health Organization |
| YF | yellow fever (vaccine) |

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_28684

