WHO Immunological Basis for Immunization Series

Module 4: Pertussis
Update 2017

Immunization, Vaccines and Biologicals

World Health Organization

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Contents

Abbreviations and acronyms

AC	adenylate cyclase
ACT	adenylate cyclase toxin
AGG	agglutinogens
aP	acellular pertussis (vaccine)
BA	bacterial agglutination
BrkA	Bordetella resistance to killing genetic locus, frame A
BvgAS	complex virulence expression system
CHO	Chinese hamster ovary (cells)
CMI	cell-mediated immunity
DNT	dermonecrotic toxin
DTaP	diphtheria–tetanus–acellular pertussis
DTP	diphtheria-tetanus-pertussis vaccine
DTwP	diphtheria–tetanus whole-cell pertussis (vaccine)
ELISA	enzyme-linked immunosorbent assay
ELISPOT	enzyme-linked immunospot assay
EPI	Expanded Programme on Immunization
ESEN	European Sero-Epidemiology Network
FHA	filamentous haemagglutinin
FIM	fimbriae
GMT	geometric mean titre
GSK	GlaxoSmithKline
HCW	health-care worker
Hib	Haemophilus influenzae type b
HLT	heat-labile toxin
ICS	intracellular cytokine secretion
Ig	immunoglobulin
IPV	inactivated polio vaccine
Lf	flocculation units of toxoid

LOS	lipooligosaccharide
LPS	lipopolysaccharide
MRC	Medical Research Council
NACI	National Advisory Committee on Immunization
NIBSC	National Institute for Biological Standards & Control
NIH	National Institutes of Health
NT	neutralization test
OMP	outer membrane protein
PRN	pertactin
PRP	polyribosyl-ribitol-phosphate
PT	pertussis toxin
RGD	arginine-glycine-aspartic acid
RTX	repeats-in-toxin
SphB1	serine-protease/lipoprotein
TCT	tracheal cytotoxin
Tdap	DTaP with reduced antigen content
VE	vaccine efficacy
WHO	World Health Organization
wP	whole-cell pertussis (vaccine)

Preface

This module is part of the WHO series The Immunological Basis for Immunization, which was initially developed in 1993 as a set of eight modules, comprising one module on general immunology and seven modules each devoted to one of the vaccines recommended for the Expanded Programme on Immunization, i.e. vaccines against diphtheria, measles, pertussis, polio, tetanus, tuberculosis and yellow fever. Since then, this series has been updated and extended to include other vaccines of international importance.

The main purpose of the modules is to provide national immunization managers and vaccination professionals with an overview of the scientific basis of vaccination against a range of important infectious diseases. The modules developed since 1993 continue to be vaccine-specific, reflecting the biological differences in immune responses to the individual pathogens and the differing strategies employed to create the best possible level of protection that can be provided by vaccination. The modules also serve as a record of the immunological basis for the WHO recommendations on vaccine use, published in the WHO vaccine position papers.*