

LIST OF ABBREVIATIONS

Abbreviation or symbol	Term
%	percent
°C	degree(s) Celsius
µg	microgram(s)
µl	microliter(s)
µm	micron(s), micrometer(s)
<i>A.</i>	<i>Aeromonas</i>
Ab	antibody (-ies)
Ace	accessory cholera toxin
ACF	accessory colonization factor
ADP	adenosine diphosphate
AMP	adenosine monophosphate
APC	antigen presenting cell(s)
APW	alkaline peptone water
ASC	antibody secreting cell(s)
ATP	adenosine triphosphate
BCIP/NBT	bromochloroindolyl phosphate/nitroblue tetrazolium
bp	base pair(s)
BSA	bovine serum albumin
cAMP	cyclic adenosine monophosphate
CD	cluster of differentiation
<i>cep</i>	core encoded pilin gene
CHA	cell-bound hemagglutinin
CF	crude fimbrial extract
CFU	colony forming unit(s)
Cl ⁻	chloride ions
cm	centimeter(s)
CMI	cellular mediated-immunity
CMV	cytomegalovirus

Abbreviation or symbol	Term
CSF-1	colony stimulating factor-1
CT	cholera toxin
CTL	cytotoxic T lymphocyte(s)
CTX ϕ	cholera toxin-encoding phage
DCs	dendritic cell(s)
DEAE	diethylaminoethyl
DNA	deoxyribonucleic acid
DW	distilled water
<i>E. coli</i>	<i>Escherichia coli</i>
EDTA	ethylenediaminetetraacetic acid
<i>e.g.</i>	<i>exempli gratia</i>
ELISA	enzyme-linked immunosorbent assay(s)
<i>et al.</i>	<i>et alli</i>
FDA	Food and Drug Administration
$\times g$	relative centrifugal force (acceleration gravity)
g	gram(s)
GI	Gastrointestinal
h	hour(s)
ICAM-1	intercellular adhesion molecule-1
IEL	intraepithelial lymphocyte(s)
IF	immunofluorescence
IFA	immunofluorescence assay
Ig	immunoglobulins
IgA	immunoglobulin A
IgD	immunoglobulin D
IgE	immunoglobulin E
IgG	immunoglobulin G
IgM	immunoglobulin M
<i>i.e.</i>	<i>id est</i> , namely (English)
kDa	kilodalton(s)
kHz	kiloHertz(es)

Abbreviation or symbol	Term
kg	kilogram(s)
KIA	Kligler's iron agar
L	liter(s)
LB	Luria-Bertani
Log	logarithm (to base 10; common logarithm)
LPB	lipopolysaccharide-binding protein
LPS	lipopolysaccharide
LT	heat-labile enterotoxin
M	molar(s)
MAb	monoclonal antibody(-ies)
mg	milligram(s)
min	minute(s)
ml	milliliter(s)
mM	millimolar(s)
mm	millimeter(s)
Mr	molecular mass
MW	molecular weight
N	normality (normal)
Na ₂ HPO ₄	disodium hydrogen phosphate
NaCl	sodium chloride
NAD	nicotinamide adenine dinucleotide
NaHCO ₃	sodium bicarbonate
NaH ₂ PO ₄	sodium dihydrogen phosphate
NCM	Nitrocellulose membrane
ng	nanogram(s)
NK	natural killer
NSS	normal saline solution
OD	optimal density(-ies)
OMP	outer membrane protein(s)
ORF	open reading frame
P	procholeragenoid

Abbreviation or symbol	Term
PAMP	pathogen associated molecular pattern(s)
PB	phosphate buffer
PBMC	peripheral blood mononuclear cell(s)
PBS	phosphate buffered-saline
PBST	phosphate buffered-saline containing Tween-20
pg/ml	picograms per milliliter
pH	Negative logarithm of hydrogen ion activity
pIgR	polymeric immunoglobulin receptor
PLG	poly (D, L-lactide-co-glycolide)
PMN	polymorphonuclear cells
pmol	picomole(s)
POE	polyoxyethylene
POP	polyoxypropylene
PRR	pattern recognition receptor(s)
RF	replicative form
rpm	round(s) per minute
rRNA	ribosomal ribonucleic acid
<i>S. aureus</i>	<i>Staphylococcus aureus</i>
sIgA	secretory immunoglobulins A
spp.	species
TBS	Tris-buffered-saline
TCBS	thiosulfate-citrate-bile salts-sucrose medium
Tcp	toxin co-regulated pilus (pili)
TcpA	toxin co-regulated pilus (pili)-A
TCR	T-cell receptor
TDM	trehalose dimycolate
TE	Tris-ethylenediaminetetraacetic acid
TGF- β	transforming growth factor- β
TIR	Toll/IL-1 receptor
TLR	Toll-like receptor
TNF- α	tumor necrosis factor-alpha

Abbreviation or symbol	Term
TRAF6	tumor-necrosis-factor-associated factor-6
Tris	Tris (hydroxymethyl aminomethane)
TSA	trypticase soy agar
TSB	trypticase soy broth
TSI	triple sugar iron agar
UDW	ultrapure distilled water
UV	unilamellar vesicle(s)
v/v	volume by volume
VC	<i>Vibrio cholerae</i>
VPI	<i>V. cholerae</i> pathogenicity island
VPS	<i>V. cholerae</i> exopolysaccharide
w/v	weight by volume
Zot	Zonula Occludens toxin