

## ABBREVIATIONS AND ACRONYMS

### A

AAALAC: Association for Assessment and Accreditation of Laboratory Animal Care  
ABC: ATP-binding cassette  
ABSA: American Biological Safety Association  
ABSL: animal biosafety level  
ACB: *Acinetobacter calcoaceticus baumannii*  
ACEI: angiotensin-converting enzyme inhibitor  
ACIP: Advisory Committee on Immunization Practices  
ADAMs: A Disintegrin-Like And Metalloproteinase-containing protein  
Ads: adenoviruses  
Ag-ELISA: antigen enzyme-linked immunosorbent assay  
agr: accessory gene regulator  
AHF: Argentinian hemorrhagic fever  
AI: avian influenza  
AIDS: acquired immune deficiency syndrome; acquired immunodeficiency syndrome  
AIGIV: anthrax immune globulin intravenous (human)  
ALO: anthrolysin O  
 $\alpha$ -DG:  $\alpha$ -dystroglycan  
AML: Area Medical Laboratory  
AMR: antimicrobial resistance monitoring  
ANG: Air National Guard  
Ank: ankyrin repeat domain  
AnkG: ankyrin repeat-containing protein G  
AP-1: activator protein 1  
APC: antigen-presenting cell  
APHIS: Animal and Plant Health Inspection Services  
APSV: Aventis Pasteur smallpox vaccine  
AR: Army Regulation  
ARDS: acute respiratory distress syndrome  
ARM: antimicrobial resistance monitoring  
ARMoR: Antimicrobial Resistance Monitoring and Research (Program)  
ARO: alternate responsible official  
ASD(HA): Assistant Secretary of Defense for Health Affairs  
ASP: amnesic shellfish poisoning  
AT: autotransporter  
ATLS: Advanced Trauma Life Support  
ATP: adenosine 5'-triphosphate  
AVA: anthrax vaccine adsorbed  
AVP: anthrax vaccine precipitated

### B

BAMC: Brooke Army Medical Center  
BAT: botulism antitoxin heptavalent  
BBB: blood-brain barrier  
BDBV: Bundibugyo virus  
BEBOV: Bundibugyo ebolavirus  
BHF: Bolivian hemorrhagic fever  
BIG: Botulism Immune Globulin Intravenous  
BMBL: *Biosafety in Microbiological and Biomedical Laboratories*  
BoNT: botulinum neurotoxin  
BPRP: Biological Personnel Reliability Program  
BSAT: biological select agents and toxins  
BSC: biological safety cabinet  
BSL: biosafety level  
BSP: Biological Surety Program  
BT: bioterrorism  
BTWC: Biological and Toxin Weapons Convention  
BuHA: *Burkholderia* Hep\_Hag autotransporter  
BW: biological warfare  
BWC: Biological Weapons Convention

### C

C: capsid  
cAd3-EBOZ: chimpanzee adenovirus type 3–vectored ebolavirus Zaire vaccine  
CAdVax: complex adenovirus vaccine  
CAFO: concentrated animal feeding operation  
CAP: College of American Pathologists  
CARA MEL: CBRNE Analytical & Remediation Activity Mobile Expeditionary Laboratory  
CBDP: Chemical Biological Defense Program  
CBIRF: Chemical-Biological Incident Response Force  
CBRN: chemical, biological, radiological, and nuclear  
CBRNE: chemical, biological, radiological, nuclear, and explosives  
CBSP: Certified Biological Safety Professional  
CC<sub>50</sub>: modeling of cytotoxicity data  
CCD: colony collapse disorder  
CCHFV: Crimean–Congo hemorrhagic fever virus  
CCP: critical control point  
CD: Cluster of Differentiation  
CD-22: Camp Detrick-22  
CDC: Centers for Disease Control and Prevention  
CDC-DSAT: Centers for Disease Control and Prevention-Division of Select Agents and Toxins  
CEV: cell-associated enveloped virion  
CFR: case fatality rate; Code of Federal Regulations  
CFT: cell-free translation; complement fixation test  
CFU/cfu: colony-forming unit  
CHAPV: Chapare virus  
CHIK: chikungunya  
CHIKV: chikungunya virus  
CHOC: chocolate agar  
CLDC: cationic liposome DNA complex  
CLIA: Clinical Laboratory Improvement Amendments  
CLIP: Clinical Laboratory Improvement Program  
CLSI: Clinical Laboratory Standards Institute  
CMA: competent medical authority  
CMI: cell-mediated immune  
CNS: central nervous system  
CO: certifying official  
CONUS: continental United States  
CoV: Coronavirus  
CP: capsid protein  
CpG: cytosine-phosphate-guanine  
CPS: capsular polysaccharide  
CSF: cerebrospinal fluid  
CSH: Combat Support Hospital  
CST: Civil Support Teams  
CT: computed tomography  
CWC: Chemical Weapons Convention

### D

DA: US Department of the Army  
DA PAM: Department of the Army Pamphlet  
dB: decibel  
DEET: *N,N*-diethylmetatoluamide  
DENV: dengue virus  
DHF: dengue hemorrhagic fever  
DHHS: Department of Health and Human Services  
DHS: Department of Homeland Security  
DIC: disseminated intravascular coagulation  
DNA: deoxyribonucleic acid  
DoD: Department of Defense  
DoD-GEIS: Department of Defense-Global Emerging Infections Surveillance and Response System

DoDI: Department of Defense Instruction  
DON: deoxynivalenol  
dot/icm: defective in organelle trafficking/intracellular multiplication (lc)  
DPP4: dipeptidyl peptidase 4  
DRC: Democratic Republic of the Congo  
DSAT: Division of Select Agent and Toxins  
DSS: dengue shock syndrome  
DURC: dual use research of concern

## E

EAEC: enteroaggregative *Escherichia coli*  
EBOV: Ebola virus  
EC<sub>50</sub>: concentration of a drug that gives half-maximal response  
ECL: electrochemiluminescence  
EDTA: ethylenediaminetetraacetic acid  
EEE: eastern equine encephalitis  
EEEV: Eastern equine encephalitis virus  
EEV: extracellular enveloped virion  
EIEC: enteroinvasive *Escherichia coli*  
EHEC: enterohemorrhagic *Escherichia coli*  
ELISA: enzyme-linked immunosorbent assay  
EMDG: Expeditionary Medical Dental Group  
EPA: US Environmental Protection Agency  
EPEC: enteropathogenic *Escherichia coli*  
EPICON: epidemiological consultation  
EPS: exopolysaccharide  
ER: endoplasmic reticulum  
Erks: extracellular signal-regulated kinases  
ESBL: extended-spectrum  $\beta$ -lactamase  
ESF: emergency support function  
ESKAPE: *Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter calcoaceticus baumannii*, *Pseudomonas aeruginosa*, and *Enterobacter*  
ET: edema toxin  
EUA: Emergency Use Authorization  
EV: enveloped virion  
EVD: Ebola virus disease

## F

F: fusion protein  
F1: fraction 1  
Fab: fragment antigen-binding  
FBI: Federal Bureau of Investigation  
FDA: Food and Drug Administration  
FEMA: Federal Emergency Management Agency  
FFAG: flow-focusing aerosol generator  
FFBAT: Air Force Biological Augmentation Team  
FHP: force health protection  
fla B: flagellin B gene  
FMD: foot and mouth disease  
FPI: *Francisella pathogenicity island*  
FSAP: Federal Select Agent Program

## G

G: attachment glycoprotein  
Gal/GalNac: *N*-acetyl galactosamine  
GCP: Good Clinical Practices  
G-CSF: granulocyte colony-stimulating factor  
GEIS: Global Emerging Infections Surveillance and Response System  
GMP: good manufacturing practices  
GPC: glycoprotein precursor  
GTOV: Guanarito virus  
GTX: gonyautoxin

## H

HA: hemagglutinin  
HACCP: hazard analysis critical control point  
HAI: healthcare-associated infection/ hospital-associated infection  
HAVCR1: hepatitis A virus cellular receptor 1  
HAZMAT: hazardous materials  
HBAT: heptavalent botulinum antitoxin  
HBsAg: hepatitis B surface antigen  
Hc: heavy chain  
HCoV: human Coronavirus  
HDP: 1-0-hexadecyl-oxypro-pyl  
HEPA: high-efficiency particulate air  
HeV: Hendra virus  
HFRS: hemorrhagic fever with renal syndrome  
HHA: hand held assay  
HHS: US Department of Health and Human Services  
HI: hemagglutination inhibition  
HIV: human immunodeficiency virus  
HLA: Human Leukocyte Antigen  
HPAI: highly pathogenic avian influenza  
HPV: human papilloma virus  
HTS: high throughput screening  
HUS: hemolytic uremic syndrome

## I

IBC: Institutional Biosafety Committee  
IC<sub>50</sub>: half-maximal inhibitory concentration  
ICAM-1: intercellular adhesion molecule-1  
ICC: International Clonal Complex  
ICD-10: *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision*  
ICLN: Integrated Consortium of Laboratory Networks  
ICS: Incident Command System  
IEV: intracellular enveloped virion  
IFA: indirect immunofluorescence assay  
IFN: interferon  
IFN $\gamma$ : interferon gamma  
IgG: immunoglobulin G  
IgM: immunoglobulin M  
IHA: direct hemagglutination assay  
IHR: International Health Regulations  
IL: interleukin  
IM: intramuscular/intramuscularly  
IMP: inosine 5'-phosphate  
IMV: intracellular mature virion  
IN: intranasal  
IND: investigational new drug  
IP: intraperitoneal  
IQ: ilimaquinone  
IRB: institutional review board  
IT: intratracheal  
IQ: ilimaquinone  
IU: international unit  
IV: intravenous

## J

JBAIDS: Joint Biological Agent Identification and Diagnostic System  
JEV: Japanese encephalitis virus  
JUNV: Junin virus

## K

KPC: *Klebsiella pneumoniae* carbapenemase

**L**

L: large; large RNA-dependent RNA polymerase  
 LAAV: live attenuated anthrax vaccine  
 LAMP: lysosomal-associated membrane protein  
 LASV: Lassa virus  
 LC/MS: liquid chromatography/mass spectrometry  
 LC<sub>50</sub>: acute toxicity  
 LD<sub>50</sub>: lethal dose (amount necessary to kill 50% of the subject population)  
 LFA-1: lymphocyte function-associated antigen  
 LLAP: Legionella-like amoebal pathogen  
 LLOV: Llovium virus  
 LOD: limit of detection  
 LPC: lysophosphatidylcholine  
 LPCR: large-fragment polymerase chain reaction  
 LPS: lipopolysaccharide  
 LRMC: Landstuhl Regional Medical Center  
 LRN: Laboratory Response Network  
 LRN-B: Laboratory Response Network-Biological  
 LSD: lysergic acid diethylamide  
 LT: lethal toxin; long term  
 LUJV: Lujo virus  
 LVS: live vaccine strain

**M**

M: matrix protein  
 mAb/mAbs: monoclonal antibody/monoclonal antibodies  
 MACV: Machupo virus  
 MADV: Madariaga virus  
 MALDI-TOF MS: matrix-assisted laser desorption/ionization-time of flight mass spectrometry  
 MAP: mitogen-activated protein  
 MAPK: mitogen-activated protein kinase  
 MARV: Marburg virus  
 MASCAL: mass casualty event or exercise  
 Mb: megabase pair  
 MCM: medical countermeasure  
 MCP-1: monocyte chemoattractant protein-1  
 MDCK: Madin-Darby Canine Kidney cells  
 MDR: multidrug resistant  
 MDRO: multidrug-resistant organism  
 MEDCOM: US Army Medical Command  
 MEDEVAC: medical evacuation  
 MERS: Middle East Respiratory Syndrome  
 MH: Madagascar hissing  
 MHC: major histocompatibility complex  
 MHS: Military Health System  
 MIC: mean inhibitory concentration  
 miRNA: microRNA  
 MLST: multilocus sequence typing  
 MLVA: multiple-locus variable number tandem repeat analysis  
 MMAD: mass median aerodynamic diameter  
 MNGC: multinucleated giant cell  
 MOU: memorandum of understanding  
 MPL: 3-O-desacyl-4'-monophosphoryl lipid A  
 MRSN: Multidrug-Resistant Organism Repository and Surveillance Network  
 MS: mass spectroscopy  
 MSD: Meso Scale Discovery  
 MTF: medical treatment facility  
 mTOR: mammalian target of rapamycin  
 MVA: Modified Vaccinia Ankara/modified vaccinia virus Ankara  
 MVD: Marburg virus disease  
 MW: molecular weight

**N**

N: nucleocapsid protein  
 NA: neuraminidase; North American  
 NAS: National Academy of Sciences  
 NATO: North Atlantic Treaty Organization  
 NDM: New Delhi metallo-β-lactamase-1  
 NDMS: National Disaster Medical System  
 NDRF: National Disaster Recovery Framework  
 NF-AT: nuclear factor of activated T cells  
 NF-κB: nuclear factor kappa-light-chain-enhancer of activated B cells  
 NGDS: Next Generation Diagnostic System  
 NGS: next-generation sequencing  
 NHP: nonhuman primate  
 NIAID: National Institute of Allergy and Infectious Diseases  
 NIH: National Institutes of Health  
 NIOSH: National Institute of Occupational Safety and Health  
 NiV: Nipah virus  
 NIV: nivalenol  
 NLR: NOD-like receptor  
 NMDA: N-methyl-D-aspartate  
 NNMC: National Naval Medical Center  
 NOD: nucleotide oligomerization domain  
 NP: nucleoprotein  
 NPG: National Preparedness Goal  
 NRF: National Response Framework  
 NSABB: National Science Advisory Board for Biodefense  
 NSP: neurotoxic shellfish poisoning

**O**

OCONUS: outside of the continental United States  
 OEF: Operation Enduring Freedom  
 OFPBL: Oxidative-Fermentative-Polymyxin B-Bacitracin-Lactose (agar)  
 OIF: Operation Iraqi Freedom  
 OPS: O-polysaccharide  
 OR: operating room  
 OSHA: Occupational Safety and Health Administration  
 o/w: oil in water

**P**

P: phosphoprotein  
 PA: protective antigen  
 pAbs: polyclonal antibodies  
 PAPR: powered air-purifying respirator  
 PBT: pentavalent botulinum toxoid  
 PCR: polymerase chain reaction  
 PDI: potentially disqualifying information  
 PEG: polyethylene glycol  
 PEP: postexposure prophylaxis  
 PFGE: pulsed field gel electrophoresis  
 PHV: parvovirus-like hybrid virus  
 PI: principal investigator  
 PI3K: phosphoinositide 3 kinase  
 PKC: protein kinase C  
 PLA2: phospholipase A2  
 Poly I:C: polyinosinic:polycytidylic acid  
 PPE: personal protective equipment  
 PPES: positive-pressure encapsulating suit  
 PRNT: plaque reduction neutralization test  
 PRNT<sub>80</sub>: 80% plaque reduction neutralization titer  
 PS: polysaccharide  
 PSI: personnel security investigation  
 PSP: paralytic shellfish poisoning; phage shock protein  
 PTA: pteric acid  
 PTK: protein tyrosine kinase  
 PV: parasitophorous vacuoles

## Q

QS: quorum sensing  
Q-Vax: Q fever vaccine

## R

rAb: recombinant antibody  
RAMP: Rapid Analyte Measurement Platform  
RANTES: regulated upon activation normal T-cell expressed, and secreted  
RAVV: Ravn virus  
rBimA: recombinant *Burkholderia* intracellular motility A  
RBP: Registered Biosafety Professional  
rDNA: ribosomal deoxyribonucleic acid  
RDTE: research, development, test, and evaluation  
RESTV: Reston virus  
RFLP: restriction fragment-length polymorphism  
RIFLE: risk, injury, failure, loss, and end-stage renal disease  
RIP: ribosome inactivating protein  
RNA: ribonucleic acid  
RNP: ribonucleoprotein  
RO: responsible official  
RR: relative risk  
RSV: respiratory syncytial virus  
RTA: ricin A chain  
RTB: lectin B-chain  
RT-PCR: reverse transcription/transcriptase polymerase chain reaction  
RVFV: Rift Valley fever virus

## S

S: small  
SA: South American  
SABV: Sabiá virus  
SARS: severe acute respiratory syndrome  
SARS-CoV: severe acute respiratory syndrome-Coronavirus  
SAT: select agents and toxins  
SBA: sheep blood agar  
SD: standard deviation  
SDA: Seventh-day Adventist  
SdAbs: single domain antibodies  
SE: staphylococcal enterotoxin  
SEA: staphylococcal enterotoxin A  
SEB: staphylococcal enterotoxin B  
SEBOV: Sudan ebolavirus  
SFTS: severe fever with thrombocytopenia syndrome  
SFTSV: severe fever with thrombocytopenia syndrome virus  
SFV: Semliki Forest virus  
sGP: secreted glycoprotein  
SINV: Sindbis virus  
SIP: Special Immunizations Program  
SMX: sulfamethoxazole  
SNARE: soluble *N*-ethylmaleimide-sensitive factor activating protein receptor  
SNS: Strategic National Stockpile  
SOP: standard operating procedure  
SPE: streptococcal pyrogenic exotoxin  
SRA: security risk assessment  
ssGP: secondary secreted glycoprotein  
ST: sequence type  
STAG: spinning top aerosol generator  
STEC: Shiga toxin-producing *Escherichia coli*  
STRIVE: Sierra Leone Trial to Introduce a Vaccine Against Ebola  
STX: saxitoxin  
SUDV: Sudan virus

## T

T3SS: type three secretion system  
T6SS: type VI secretion system  
TAFV: Tai Forest virus  
Tat: twin arginine transport  
TBEV: tickborne encephalitis virus  
TCID<sub>50</sub>: median tissue culture infective/infecting dose  
TCR: T-cell receptor  
3D: three-dimensional  
TIR: toll/IL-1 receptor  
TLR: toll-like receptor  
TMP: trimethoprim  
TMP-SMZ: trimethoprim combined with sulfamethoxazole  
TNF- $\alpha$ /TNF $\alpha$ : tumor necrosis factor-alpha  
TrD: Trinidad donkey  
TSS: toxic shock syndrome  
TSST-1: toxic shock syndrome toxin-1  
TTSS: type III secretion system

## U

UK: United Kingdom  
UN: United Nations  
UNSCOM: UN Special Commission  
USAMRIID: US Army Medical Research Institute of Infectious Diseases  
USAMU: US Army Medical Unit  
USA PATRIOT Act: Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001  
USC: United States Code  
USDA: US Department of Agriculture  
USNS: United States Naval Ship  
USSR: Union of Soviet Socialist Republics (or the Soviet Union, now Russia)

## V

V: variable  
VACV: vaccinia virus  
VAERS: Vaccine Adverse Event Reporting System  
VEE: Venezuelan equine encephalitis  
VEEV: Venezuelan equine encephalitis virus  
VHF: Venezuelan hemorrhagic fever; viral hemorrhagic fever  
VIG: vaccinia immune globulin  
VLP: virus-like particle  
VLS: vascular leak syndrome  
Vm: minute volume  
VRP: virus-like replicon particle  
VS: virtual screening  
VSV: vesicular stomatitis virus  
vWF: von Willebrand factor

## W

WCV: whole cell vaccine  
WEE: Western equine encephalitis  
WEEV: Western equine encephalitis virus  
WHO: World Health Organization  
WMD: weapons of mass destruction  
WNV: West Nile virus  
w/o: water in oil  
WRAIR: Walter Reed Army Institute of Research  
WRAMC: Walter Reed Army Medical Center  
WS: working stock  
WWI: World War I  
WWII: World War II

**Y**

Yaps: *Yersinia* autotransporter proteins  
YFV: Yellow fever virus

**Z**

Z: zinc-binding matrix protein  
ZEBOV: Zaire ebolavirus  
ZF: zinc-finger