**Biotechnology Acronyms**

**A**
- ABA: abscisic acid
- AIDS: acquired immunodeficiency syndrome
- AM: annealing mix
- amp': ampicillin-resistance gene
- amu: atomic mass unit
- AP: alkaline phosphatase
- ARS: Agricultural Research Service
- ATP: adenosine 5'-triphosphate
- au: absorbance units

**B**
- BLAST: Basic Local Alignment Search Tool, a computer program that allows researchers to compare biological sequences
- bp: base pair
- BS: Bachelor of Science
- Bt: *Bacillus thuringiensis* (*B. thuringiensis*)

**C**
- CaCl₂: calcium chloride
- cDNA: copy DNA
- CD4 cells: referring to human white blood cells, which contain the cell surface recognition protein CD4
- cm: centimeter
- CF: cystic fibrosis
- CD: compact disc
- CDC: Center for Disease Control and Prevention
- cGMPs: good manufacturing practices
- CHO: Chinese hamster ovary
- cm: centimeter
- CPDP: Comprehensive Product Development Plan
- CO₂: carbon dioxide
- COOH: carboxyl [group]
- CT [scan]: computed tomography
- CuSO₄: cupric sulfate (anhydrous)

**D**
- dATP: deoxyadenosine triphosphate, the cell's source of cytosine (C) for DNA molecules
- D: diopter
- DEAE: diethylaminoethyl
- DNA: deoxyribonucleic acid
- dH₂O: distilled water
- ddNTP: dideoxynucleotide
- dNTP: deoxynucleotide triphosphates (the dATP, dCTP, dGTP, and dTTPs)
- DMV: Department of Motor Vehicles
- DPA: diphenylamine [solution]
- DTT: dithiothreitol
- DVM: Doctor of Veterinary Medicine

**E**
- EDTA:
- ELISA: enzyme-linked immunosorbent assay
- EPA: Environmental Protection Agency
- EtBr: ethidium bromide
- EtOH: ethanol

**F**
- FAA: Federal Aviation Administration
- FDA: Food and Drug Administration
- FLPC: fast-performance liquid chromatography

**G**
- g: gram
- GC: gas chromatograph
gDNA: genomic DNA
GFP: green fluorescent protein
GMO: genetically modified organism
gp: glycosylated protein
GM-CSF: granulocyte-macrophage colony-stimulating factor
GTE: glucose/TRIS/EDTA

H
H₂O: water
H₂O₂: hydrogen peroxide
HCl: hydrogen chloride
HeLa cells: human epithelial cells
HEPA: High Efficiency Particulate Air filters
H⁺: hydrogen ions
hGH: human growth hormone
HGP: Human Genome Project
HPLC: high-performance liquid chromatography
HR: Human Resources
HRP: horseradish peroxidase

I
IAA: indoleacetic acid
IgE: immunoglobulin E
IND: Investigational New Drug
IVF: In vitro fertilization

K
kb: kilobase
KCl:
kD: kilodalton; 1000 daltons, the unit used to report the size of a protein
kg: kilogram

L
Laemmli buffer
λmax: wavelength of maximum (peak) light absorption
λmin: wavelength of minimum light absorption
LB agar: Luria Bertani agar [media]
LSC: laser-scanning cytometer

M
mAmp: milliamp
MA: Master of Arts
MS: Master of Science
MAC: Macintosh computer
MGDF: megakarocyte growth and development factor
mg: milligram
µm: micrometer:
ml: milliliter
mm: millimeter
M: mole, molar
mM : millimoles
µM: micromole
µM/L: micromolar per liter
mM/L: millimolar per liter
MRI: magnetic resonance image
mRNA: messenger RNA
MS: mass spectrometer
MS: multiple sclerosis
MSDS: Material Safety Data Sheet(s)

N
NaCl: salt
NaOH: sodium hydroxide
NASA: National Aeronautics and Space Administration
NIH: National Institutes of Health
nm: nanometer
NMR: nuclear magnetic resonance
NSF: National Science Foundation
NPT II: neomycin phosphotransferase

O
O₂: oxygen
OH⁻ ions: hydroxyl ions
OD: optical density

P
PA: practical applications
PAGE: polyacrylamide gel electrophoresis
PC: personal computer
PCR: polymerase chain reaction
PDNA: plasmid DNA
PE: possible errors
pH: potential for hydrogen atoms or acid/base level; the measure of hydrogen ion concentration in water
PhD: Doctor of Philosophy
PD: pharmacodynamic
PK: pharmacokinetic
PKC: protein kinase C
PKU: phenylketonuria
PMP: plant-made pharmaceuticals
ppm: parts per million.
psi: pounds of pressure per square inch
PTC: plant tissue culture

Q
QA: Quality Assurance
QC: Quality Control

R
RA: research associate
RBC: red blood cell
R&D: Research and Development
rDNA: recombinant DNA
REE: “results” with “evidence” and “explanation”
rpm: revolutions per minute
RFLPs: restriction fragment length polymorphisms
R-group: side chains of amino acids; R is used in molecular formulas to indicate a nonspecified side chain
rhInsulin: recombinant human insulin
RNA: ribonucleic acid
RNAi: RNA interference
rRNA: ribosomal RNA

S
SCID: severe combined immunodeficiency
SD: standard deviation
SDS: sodium dodecyl sulfate
siRNA: short-interfering RNA
SNP: single nucleotide polymorphism
STE: Salt/TRIS/EDTA

T
TBE buffer: TRIS, boric acid, and EDTA
TE buffer: TRIS/EDTA
TEM: transmission electron microscope
TIGR: The Institute of Genomic Research
TMB: tetramethylbenzidine
t-PA: tissue plasminogen activator
tRNA: transfer RNA
TSWV: Tobacco Spotted Wilt Virus

U-V
USDA: US Department of Agriculture
UV: ultraviolet
VIS: visible spectrum [light]
VNTR: variable number of tandem repeats

W
WBC: white blood cell
WFP: Wisconsin Fast Plants

X-Y-Z
YAC: yeast artificial chromosome

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