

Biological Term (Alphabetical order)	Synonymous Engineering Term (from Functional Basis)
Abscission	Separate
Absorb	Import, Contain, Collect
Acclimatize	Change
Acid	Liquid Material
Activate, Active	Link, Actuate, Status Signal
Adenosine	Solid-Solid Mixture Material
Adhere	Join
Adipose	Solid-Object Material
Adrenocorticotropin	Liquid-Liquid Mixture Material
Air	Gas-Gas Mixture Material
Algae	Solid-Liquid Mixture Material
Allele	Status Signal
Alter	Change
Alternate	Change
Anaphase	Divide, Status Signal
Angisperm	Solid-Object Material
Apoplast	Solid-Object Material
Archaea	Solid-Object Material
Articulate	Allow DOF
ATP	Solid-Particulate Material
Attract	Import
Auxin	Liquid-Liquid Mixture Material
Bacterium, Bacteria	Solid-Liquid Mixture Material
Base	Liquid Material
Being	Human Material
Bind, binding	Export, Join, Link, Change, Stabilize, Analog Control Signal
Blastula	Solid-Solid Mixture Material
Bleaching	Separate
Blend	Mix
Block	Export
Blood	Liquid Material, Solid-Liquid Mixture Material
Body	Human Material, Solid-Object Material
Bond	Couple, Join
Bone	Solid-Object Material
Bounce	Transport
Breakdown	Export, Collect
Broken	Status Signal
Buffer	Liquid Material
Build	Couple
Burn	Convert
Calcitonin	Liquid-Liquid Mixture Material

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Calorie	Chemical Energy
Capillary	Solid-Object Material
Capture	Control Signal
Carbon	Solid-Object Material
Carotenoid	Solid-Particulate Material
Catalyze	Change
Catalyzed	Status Signal
Catch	Collect
Cell	Solid-Liquid Mixture Material
Center	Analog Control Signal
Centriole	Solid-Object Material
Centrosome, Centrosomes	Solid-Solid Mixture Material
Chain	Solid-Object Material
Change	Change, Status Signal
Charge, Charged	Electrical Energy
Chemical	Liquid Material
Chlorine	Gas Material
Chloroplast	Solid-Object Material
Chromosome, Chromosomes	Solid-Object Material
Cilia	Solid-Object Material
Circulate	Distribute, Transport
Clamp	Link
Cleave	Divide
Cling	Stabilize
Clog	Stop
Coil	Decrease
Cold	Thermal Energy
Communicate	Transmit, Indicate
Compress	Decrease
Concentrate	Collect
Conduct	Transport
Cone	Solid-Object Material
Conifer	Solid-Object Material
Conjugation	Status Signal
Conserve	Store
Constrict	Decrement, Condition
Consume	Import
Contract	Mix, Change, Mechanical Energy
Contrain	Prevent
Convert	Convert, Store
Cortisol	Liquid-Liquid Mixture Material

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Cover	Inhibit
Cryptochromes	Solid-Particulate Material
Cue	Status Signal
Cycle	Status Signal
Cytokinesis	Divide
Cytokinin	Solid-Particulate Material
Dark	Visual Status Signal
Decarboxylation	Decrement
Decompose	Convert
Deficient	Status Signal
Degrade	Change, Convert
Denature	Separate
Deoxygenate	Remove
Deposit	Store
Depress	Mechanical Energy
Destroy	Inhibit
Detach	Separate
Detect	Detect
Develop	Convert, Support, Control Signal
Dialysis	Separate, Transport
Diffuse, Diffusion	Transport, Distribute, Status Signal
Digest	Collect, Control Signal
Disperse	Distribute, Transport
Distribute	Control Signal
Divide, Division	Decrease, Divide
DNA	Solid-Particulate Material, Solid-Composite Material
Echolocation	Acoustic Energy
Egg	Solid-Object Material
Electron	Electrical Energy
Electrophoresis	Separate, Regulate
Embryo	Solid-Object Material
Envelope	Surround
Enzyme	Solid-Particulate Material, Solid-Composite Material
Estrogen	Liquid-Liquid Mixture Material
Evacuate	Remove
Exchange	Mix, Distribute
Excrete	Export, Control Signal
Exon	Solid-Particulate Material
Expand	Increase
Exposed	Status Signal
Expulsion	Remove

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Extend	Couple
Extinguish	Stop
Extracellular fluid	Liquid-Liquid Mixture Material
Feed	Supply
Feedback	Electrical Energy, Status Signal
Fermentation	Convert
Fiber	Solid-Object Material
Field	Electrical Energy, Magnetic Energy
Filtrate	Remove
Flagella	Solid-Object Material
Flower	Discrete Control Signal
Fluctuate	Change
Fluid	Liquid Material
Fluoresce	Indicate
Fly	Transport
Fold	Decrease
Formation	Status Signal
Fragment	Distribute
Free	Separate
Fruiting	Status Signal
Fuel	Chemical Energy
Fuse	Join
Gate	Regulate
Gene	Solid-Particulate Material
Gibberellin	Chemical Energy
Gila	Solid-Liquid Mixture Material
Glomerulus	Solid-Solid Mixture Material
Glucagon	Material
Gluconeogenesis	Convert
Glucose	Chemical Energy
Glycerol	Solid-Particulate Material
Glycogen	Chemical Energy
Glycolysis	Convert
Gravity	Magnetic Energy
Grow	Increase, Convert, Control Signal
GTP	Solid-Particulate Material
Guage	Measure
Gustation	Taste Status Signal
Hair	Solid-Object Material
Halt	Stop
Heart	Solid-Object Material

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Heat	Thermal Energy
Hemoglobin	Solid-Liquid Mixture Material
Hippocampus	Solid-Object Material
Hold	Store, Stabilize
Homeostatis	Stabilize
Hormone	Solid-Particulate Material, Liquid-Liquid Mixture Material
Hybridization	Status Signal
Hydrolize	Convert
Hydrolysis	Change
Hyperpolarize	Increase
Hyphae	Solid-Object Material
Inactivate	Export
Induce	Actuate, Control Signal
Infrared raditation	Optical Electromagnetic Energy, Thermal Energy
Inhale	Import
Inhibit	Inhibit, Control Signal
Insulin	Liquid-Liquid Mixture Material
Intake	Import
Integrate	Control Signal
Interphase	Stop
Intracellular fluid	Liquid-Liquid Mixture Material
Intron	Solid-Particulate Material
Ionize	Convert
Jump	Transport
Kidney	Solid-Object Material
Lactate	Supply
Latch	Couple
Lateral	Status Signal
Leaf	Solid-Object Material
Learn	Process
Length	Visual Status Signal
Liberate	Remove
Ligand	Solid-Particulate Material, Chemical Energy
Light	Solar Electromagnetic Energy, Optical Electromagnetic Energy
Link	Couple
Lipid	Solid-Particulate Material, Chemical Energy
Lipoprotein	Solid-Object Material
Locate	Detect
Lock	Couple
Lysosome	Solid-Object Material
Maintain	Regulate

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Mark	Indicate
Match	Control Signal
Mate	Couple
Mechanoreceptor, Mechanoreceptors	Solid-Object Material
Meiosis	Separate
Melatonin	Liquid-Liquid Mixture Material
Membrane	Solid-Solid Mixture Material, Solid-Liquid Mixture Material
Meristems	Solid-Object Material
Metabolism	Chemical Energy
Metabolize	Convert
Metaphase	Divide, Status Signal
Microfilament	Solid-Object Material
Microtubules	Solid-Object Material
Migrate	Transfer
Mineral	Solid-Object Material
Mitochondria	Chemical Energy
Mitosis	Separate
Molecule	Solid-Particulate Material
Monitor	Measure
Monosaccharide	Solid-Solid Mixture Material
Multiply	Increase
Muscle	Solid-Object Material
Muscle contraction	Mechanical Energy
Mutate	Change, Convert
Nephron	Solid-Object Material
Neuron	Solid-Object Material
Nicotine	Solid-Particulate Material
Nitrogen	Gas Material
Nucleus	Solid-Object Material
Nutrient	Chemical Energy
Observe	Measure
Obstruct	Prevent
Opium	Solid-Particulate Material
Organ	Solid-Object Material, Solid-Composite Material
Organized	Status Signal
Organogenesis	Regulate
Orient	Guide
Orientation	Status Signal
Oscillate	Rotate
Osmosis, Osmolarity, Osmoregulation	Status Signal, Hydraulic Energy
Ovary	Solid-Object Material

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Overlap	Couple
Oxygen	Gas Material
Pain	Tactile Status Signal
Parathormone	Solid-Particulate Material
Peptide	Liquid-Liquid Mixture Material
Peptidoglycan	Solid-Liquid Mixture Material
Petiole	Solid-Object Material
Phlome	Solid-Object Material
Phosphate	Solid-Solid Mixture Material
Phosphorylate, phosphorylation	Couple, Control Signal
Photoreceptor, Photoreceptors	Solid-Object Material
Photosynthesize, Photosynthesis	Covert, Store, Analog Control Signal
Phytochrome	Solid-Liquid Mixture Material
Pigment	Solid-Object Material
Pincytosis	Increase, Change
Place	Control Signal
Plant	Solid-Object Material
Plasma	Liquid Material
Plasmid	Solid-Object Material
Plasmodesma	Solid-Object Material
Plastid	Solid-Object Material
Poison	Liquid-Liquid Mixture Material
Polymerize	Convert
Position	Guide
Potential	Electrical Energy
Preserve	Regulate
Pressure	Hydraulic Energy, Mechanical Energy, Pneumatic Energy
Project	Link
Promoter	Solid-Particulate Material
Prophase	Divide, Status Signal
Protein	Solid-Liquid Mixture Material
Pump	Transport
Pyruvate	Solid-Particulate Material
Radiate	Change
React, Reaction	Separate, Indicate, Status Signal
Receptors	Solid-Object Material
Recombination	Couple
Reduce	Collect
Regulate	Regulate
Release	Separate, Control Signal
Remain	Regulate

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Repel	Export
Replicate	Increase
Repress	Inhibit
Repressor	Solid-Liquid Mixture Material
Respire, respiration	Regulate, Convert
Resting	Status Signal
Retina	Solid-Liquid Mixture Material
Ribosome	Solid-Object Material, Solid-Solid Mixture Material
RNA	Solid-Particulate Material, Solid-Composite Material
Roll	Rotate
Saturated	Status Signal
Scatter	Distribute
Seal	Stop
See	Detect
Seed	Solid-Object Material
Segment, segmentation	Separate
Senescence	Status Signal
Separate, Separated	Status Signal, Separate
Shift	Transport
Shoot	Solid-Object Material
Shorten	Decrease
Signal	Status Signal
Slide	Guide
Slip	Change
Smell	Detect, Olfactory Status Signal
Solution	Liquid Material, Liquid-Liquid Mixture Material
Somatostatin	Liquid-Liquid Mixture Material
Somite	Solid-Object Material
Sound, Sound wave	Auditory Status Signal, Acoustic Energy
Sperm	Solid-Object Material
Spin	Rotate
Spinal Fluid	Liquid-Liquid Mixture Material
Splice	Control Signal
Sporangium	Solid-Object Material
Spore	Solid-Object Material
Spray	Distribute
Spread	Distribute
Stabilize	Regulate
Starch	Chemical Energy
Stem	Solid-Object Material
Steroid	Liquid-Liquid Mixture Material

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Stoma	Solid-Object Material
Strand	Solid-Object Material
Stretch	Mechanical Energy
Structure	Solid-Object Material
Substrate	Solid-Object Material
Sugar	Chemical Energy
Sulfur	Solid-Object Material
Sun light	Solar Electromagnetic Energy
Surround	Inhibit, Secure
Suspend	Stop
Sustain	Regulate
Swell, Swelling	Status Signal
Swim	Transport
Swivel	Rotate
Synapse	Solid-Liquid Mixture Material
Synthesize, synthesis	Translate, Couple, Convert, Analog Control Signal
Temperature	Thermal Energy
Tendon	Solid-Object Material
Tension	Mechanical Energy
Testosterone	Liquid-Liquid Mixture Material
Thyrotropin	Liquid-Liquid Mixture Material
Thyroxine	Liquid-Liquid Mixture Material
Tissue	Solid-Object Material, Solid-Composite Material
Transcribe	Translate
Transduce, Transduction	Transmit, Convert, Control Signal
Transfer	Transfer
Translation	Status Signal, Control Signal
Translocation	Discrete Control Signal
Trigger	Actuate
tRNA	Solid-Particulate Material
Tube	Solid-Object Material
Tunnel	Guide
Turn	Rotate
Twist	Change
Ultraviolet light	Solar Electromagnetic Energy
Urine	Liquid-Liquid Mixture Material
Variation	Status Signal
Vein	Solid-Object Material
Watch	Measure
Water	Liquid Material
Wave	Magnetic Energy, Hydraulic Energy

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Wrap	Decrease, Support
Xylem	Solid-Object Material
Zygote	Solid-Object Material