

English-Chinese Glossary of Key Terms for B1-B5

B1 Characteristics of living organisms (生物的特征)

English Term	Chinese Translation
movement	运动 (An action by an organism or part of an organism that causes a change in position or place)
respiration	呼吸 (Chemical reactions in cells that break down nutrient molecules and release energy for metabolism)
sensitivity	感应性 (The ability to detect and respond to changes in the internal or external environment)
growth	生长 (A permanent increase in size and dry mass)
reproduction	繁殖 (The processes that produce more organisms of the same kind)
excretion	排泄 (The removal of waste products of metabolism and substances in excess of requirements)
nutrition	营养 (The intake of materials for energy, growth and development)

B2 Cells (细胞)

English Term	Chinese Translation
plant cell	植物细胞
animal cell	动物细胞
bacterial cell	细菌细胞
cell wall	细胞壁
cell membrane	细胞膜
nucleus	细胞核
cytoplasm	细胞质

chloroplasts	叶绿体
ribosomes	核糖体
mitochondria	线粒体
vacuoles	液泡
circular DNA	环状 DNA (A form of genetic material in bacterial cells)
plasmids	质粒 (Small additional circular DNA molecules in bacterial cells)
cell	细胞 (The basic unit of structure and function in living organisms)
tissue	组织 (A group of cells with similar shape and the same function)
organ	器官 (A structure composed of different tissues arranged in a certain order to perform a specific function)
organ system	器官系统 (A system formed by the coordination of multiple functionally related organs)
organism	生物体 (An individual that can independently carry out life activities, composed of organ systems)
magnification	放大率 (The ratio of image size to actual size)
image size	像大小
actual size	实际大小
millimetres (mm)	毫米 (A unit of length)
micrometres (μm)	微米 (A unit of length, $1\text{mm} = 1000\mu\text{m}$)
specialised cells	特化细胞 (Cells with specific functions)
root hair cells	根毛细胞 (Cells whose main function is to absorb water and)

	inorganic salts)
palisade mesophyll cells	栅栏叶肉细胞 (Cells whose main function is to carry out photosynthesis)
red blood cells	红细胞 (Cells whose main function is to transport oxygen)

B3 Movement into and out of cells (物质进出细胞的方式)

English Term	Chinese Translation
diffusion	扩散 (The net movement of particles from a region of higher concentration to a region of lower concentration, resulting from random movement)
concentration gradient	浓度梯度 (The trend of particle concentration changing from high to low)
osmosis	渗透 (The net movement of water molecules through a partially permeable membrane from a region of higher water potential to a region of lower water potential)
partially permeable membrane	半透膜 (A membrane that allows certain substances to pass through while preventing others from passing through)
water potential	水势 (A physical quantity that measures the ability of water molecules to diffuse; dilute solutions have high water potential, while concentrated solutions have low water potential)
turgid	(细胞) 膨胀的 (The state of plant cells when they absorb water and are restricted from swelling by the cell wall)
turgor pressure	膨压 (The pressure exerted by the cytoplasm on the cell wall when plant cells absorb water)
plasmolysis	质壁分离 (The phenomenon where the protoplast shrinks away from the cell wall when plant cells lose water)
flaccid	(细胞) 萎蔫的 (The state of plant cells when they lose water and lose turgor pressure)

active transport	主动运输 (The movement of particles through a cell membrane from a region of lower concentration to a region of higher concentration, requiring energy produced by respiration)
surface area	表面积 (One of the factors affecting the rate of diffusion; the larger the surface area, the faster the diffusion)
temperature	温度 (One of the factors affecting the rate of diffusion; the higher the temperature, the faster the particle movement and the faster the diffusion)
distance	距离 (One of the factors affecting the rate of diffusion; the shorter the distance, the faster the diffusion)

B4 Biological molecules (生物分子)

English Term	Chinese Translation
carbohydrates	糖类 (Organic compounds composed of carbon, hydrogen and oxygen, and the main source of energy)
fats	脂肪 (Organic compounds composed of carbon, hydrogen and oxygen, and a storage substance for energy)
proteins	蛋白质 (Organic compounds composed of carbon, hydrogen, oxygen, nitrogen, etc., and the main undertaker of life activities)
glucose	葡萄糖 (A monosaccharide, one of the basic units of carbohydrates, which can be directly used by cells for energy supply)
amino acids	氨基酸 (The basic building units of proteins)
fatty acids	脂肪酸 (One of the components of fats)
glycerol	甘油 (One of the components of fats)
starch	淀粉 (A polysaccharide polymerized from glucose, and a storage substance in plant cells)
glycogen	糖原 (A polysaccharide polymerized from glucose, and a storage

	substance in animal cells)
cellulose	纤维素 (A polysaccharide polymerized from glucose, and the main component of plant cell walls)
iodine solution	碘液 (A reagent used to detect starch, which turns blue when it meets starch)
Benedict's solution	本尼迪克特试剂 (A reagent used to detect reducing sugars, which produces a red-yellow precipitate when heated with reducing sugars)
biuret test	双缩脲试剂 (A reagent used to detect proteins, which turns purple when it meets proteins)
ethanol emulsion test	乙醇乳浊液试验 (A method used to detect fats; when fats are mixed with ethanol and water is added, a white emulsion is formed)

B5 Enzymes (酶)

English Term	Chinese Translation
proteins	蛋白质 (The chemical nature of enzymes)
biological catalysts	生物催化剂 (A functional property of enzymes that can reduce the activation energy of reactions, speed up reaction rates and not be consumed itself)
metabolic reactions	代谢反应 (A general term for all chemical reactions in cells, in which enzymes participate and regulate)
active site	活性位点 (A specific region on the enzyme molecule that binds to the substrate and has a specific spatial structure)
enzyme-substrate complex	酶 - 底物复合物 (The structure formed after the enzyme binds to the substrate, which is the intermediate state of the reaction)
substrate	底物 (The specific substance that the enzyme acts on)
product	产物 (The substance produced after the enzyme catalyzes the

	substrate reaction)
specificity	特异性 (A property where an enzyme usually acts on only one or a class of substrates, resulting from the structural complementarity between the active site and the substrate)
temperature	温度 (A factor affecting enzyme activity; enzyme activity is the highest at an appropriate temperature, and excessive temperature will cause enzyme denaturation)
pH	酸碱度 (A factor affecting enzyme activity; each enzyme has an optimal pH, and deviation from this pH will affect enzyme activity and even cause denaturation)
kinetic energy	动能 (One of the mechanisms by which temperature affects enzyme activity; as temperature increases, the kinetic energy of enzyme and substrate molecules increases, and the probability of effective collisions increases)
denaturation	变性 (A phenomenon where the spatial structure of the enzyme is destroyed, leading to the loss of its activity, usually caused by high temperature, excessive acidity or alkalinity)
effective collisions	有效碰撞 (Collisions between enzyme and substrate molecules that can trigger reactions, requiring appropriate direction and energy reaching the activation energy)