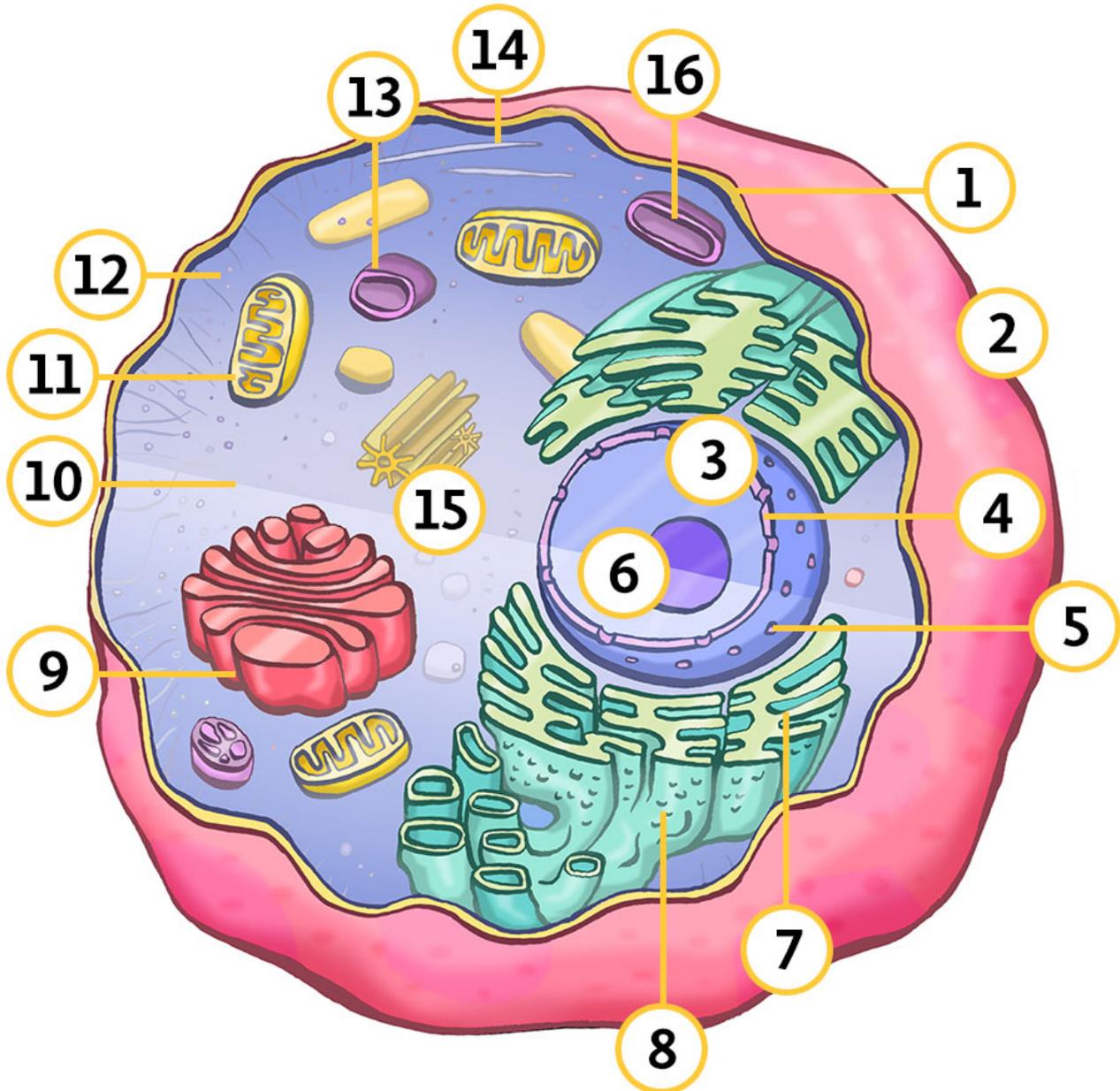


## Finding your way around the animal cell

*Our annotated diagram shows you what goes where*



### ABOUT THIS RESOURCE

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# BigPicture

1. **Plasma membrane (or cell surface membrane):** a phospholipid bilayer that contains cholesterol and proteins. It is a fluid layer that surrounds the cell and enables it to communicate with its neighbours and detect and respond to changes in the environment. It also acts as a physical barrier, controlling what can enter and exit the cell.
2. **Extracellular matrix:** the material in between cells that holds tissues together, usually made of scaffolding proteins such as collagen. Important for cell-to-cell signalling.
3. **Nucleus:** the information centre of the eukaryotic cell, where the DNA is stored, replicated and copied into messenger RNA (mRNA) (through transcription).
4. **Nuclear envelope:** double membrane that separates the contents of the nucleus from the cytoplasm.
5. **Nuclear pores:** gaps in the nuclear envelope that allow substances to move in and out of the nucleus.
6. **Nucleolus:** part of the nucleus that produces ribosomes.
7. **Endoplasmic reticulum (ER):** an extensive network of membranes. Rough ER is studded with ribosomes and is a site where proteins are made, folded and moved to the Golgi apparatus. The roles of smooth ER include lipid and steroid synthesis and drug detoxification.
8. **Ribosomes:** molecular machines, built from ribosomal RNA (rRNA) and protein, that make new proteins from mRNA through a process called translation. They are found as 'free ribosomes' in the cytoplasm and bound to the rough endoplasmic reticulum.
9. **Golgi apparatus:** one of the wondrously complex membrane systems in the cytoplasm, which modifies, packages and directs newly made proteins to where they are needed.
10. **Cytoplasm:** everything in the cell outside the nucleus; a viscous aqueous fluid (cytosol) containing water, proteins, other organic and inorganic molecules, and organelles. This is the site of many biochemical reactions.
11. **Mitochondria (singular: mitochondrion):** rod-shaped bodies in the cytoplasm that supply chemical energy to the rest of the cell. They are surrounded by a double membrane (envelope).

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12. **Microfilaments:** these are made from repeating actin subunits. Responsible for cell movement and changes in shape, and make muscle contraction possible. The thinnest component of the cytoskeleton.
13. **Vacuole:** internal bags, surrounded by a membrane, which cells use for storing food or waste.
14. **Microtubules:** small, tubular assemblies of protein, made from repeating tubulin subunits, which help maintain the cell's internal structure and move organelles and cytoplasm using molecular motors. Part of the cytoskeleton.
15. **Centrioles:** a pair of organelles that organises microtubules into spindles on which chromosomes are separated when cells divide.
16. **Lysosomes:** membrane-bound organelles that are the cell's rubbish disposal and recycling units; contain hydrolytic (digestive) enzymes.

Lead image:

Bret Syfert/Big Picture

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