Cytoplasm

by Sophia

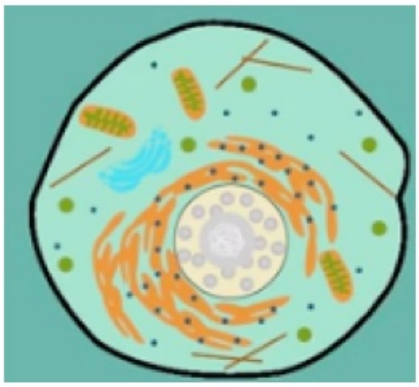
WHAT'S COVERED

In this lesson, you will learn about the cytoplasm of a cell and its structure and function within the cell. Specifically, you will learn about:

1. Cytoplasm

The **cytoplasm** is the part of the cell that fills the space between the plasma membrane and the nucleus. The plasma membrane is on the outside of the cell, and the nucleus in the middle or inside of the cell. The cytoplasm is everything that fills that space between the plasma membrane and the nucleus, including all of the organelles. When you hear about the cytoplasm, that describes everything within the cell except for the nucleus.

Below is a picture of a cell for reference.



TERM TO KNOW

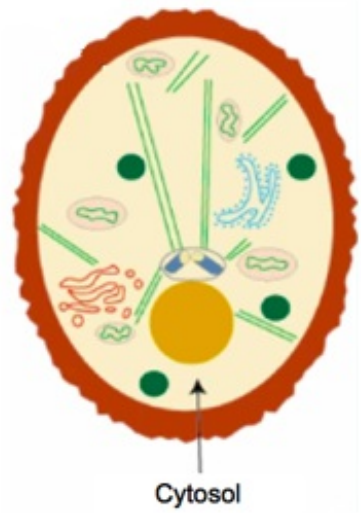
Cytoplasm

The jellylike fluid that supports the contents of the cell—found between the plasma membrane and the nuclear envelope.

1a. Cytosol

The jellylike fluid that fills the inside of the cell as part of the cytoplasm is called the**cytosol**. The cytoplasm is mostly made up of water and many chemical reactions and processes occur within it. It has a very important role in the cell to contain all of those organelles: it acts as a sort of cushion for the organelles. There are several different ions and proteins dissolved in the cytoplasm that help in chemical reactions. Many of these

reactions and processes will actually take place within the cytoplasm.



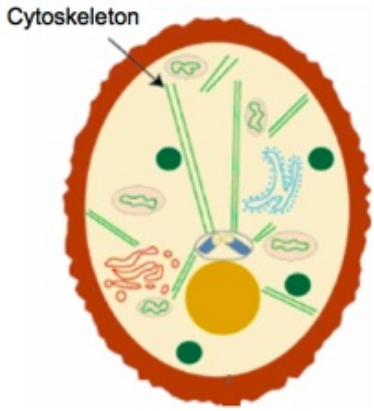
TERM TO KNOW

Cytosol

The liquid found inside the cytoplasm that is mostly composed of water.

1b. Cytoskeleton

The cytoplasm also contains all of the cell organelles, including the **cytoskeleton**. The cytoskeleton is a part of the cell contained in the cytoplasm that acts as the structure and support for the cell.



↱ EXAMPLE Think of your skeleton, for example, and the role that your skeleton plays. It acts to support your body and give your body structure. This is similar to the cytoskeleton of a cell; it has some of the same roles. It helps the cell to maintain its shape and supports the cell as a whole.

The cytoskeleton is composed of three different parts.

Parts of the Cytoskeleton	
Microtubules 	Largest parts of the cytoskeleton. They move cell parts and help to organize the cell.
Microfilaments	

	Act to reinforce parts of the cell and also help to anchor membrane proteins.
Intermediate filaments 	Help to strengthen the cytoskeleton. They also help to anchor actin and myosin, which are an important part of muscle contractions.

TERM TO KNOW

Cytoskeleton

The protein structure that provides support to the cell—much like the bony skeleton supports the human body.

SUMMARY

This lesson has been an overview of the structure and function of the **cytoplasm**, as well as an introduction to the structure and function of the cytoskeleton. You also learned about **cytosol** and that the three parts of the **cytoskeleton** are microfilaments, intermediate filaments, and microtubules.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND AND KELSEY PERREAULT

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Cytosol

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