



# Composition of Blood

- Blood is composed of blood cells suspended in blood plasma.
- Plasma, which constitutes 55% of blood fluid, is mostly water (92% by volume)
- Contains proteins, ions, glucose, hormones, (plasma being the main medium for excretory product transportation), and blood cells themselves.

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- Albumin is the main protein in plasma, and it functions as regulate the colloidal osmotic pressure of blood.
  - The blood cells are mainly red blood cells (also called RBCs or erythrocytes), white blood cells (also called WBCs or leukocytes) and platelets (also called thrombocytes).

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- The most abundant cells in vertebrate blood are RBCs.
  - These contain hemoglobin (an iron-containing protein,) which facilitates oxygen transport by reversibly binding to this respiratory gas exchange thereby increasing its solubility in blood.

- In contrast, carbon dioxide is mostly transported extracellularly as bicarbonate ion transported in plasma.

Hematocrit	45 ± 7 42 ± 5
pH	7.3–7.4
base excess	-3 to +3
PO <sub>2</sub>	10–13 kPa (80–100 mm Hg)
PCO <sub>2</sub>	4.8–5.8 kPa (35–45 mm Hg)
HCO <sub>3</sub> <sup>-</sup>	21–27 mM