

The Liquid Matrix of Blood

A Clinical Dashboard of Plasma
Composition and Function



Whole Blood Proportion

55%

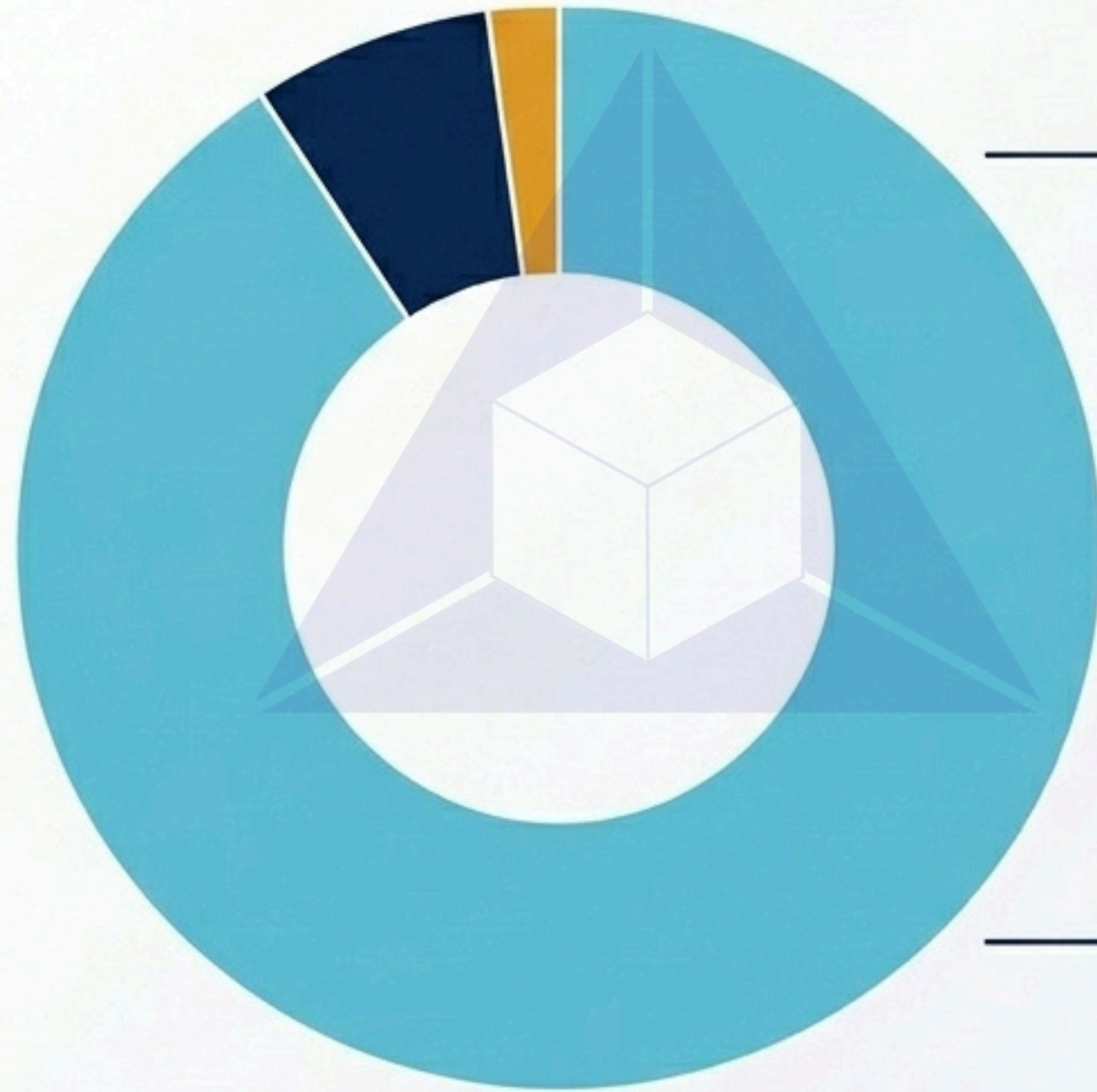
Plasma: A straw-coloured, viscous fluid constituting the majority of whole blood volume.



45%

Formed Elements:
Erythrocytes, leucocytes,
and platelets.

The Plasma Matrix Breakdown



90-92%

Water acts as the primary solvent, providing the fluid medium for systemic transport.

6-8%

Complex biological proteins essential for bodily defense, balance, and repair.

<2%

Minerals, nutrients, and active transit molecules.



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



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Key Highlights

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- » Get Clear Explanations, Not Just Marks
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The Major Protein Triad

FIBRINOGEN



Crucial for the coagulation or clotting of blood. Prevents excessive blood loss during injury.

GLOBULINS



Primarily involved in the defense mechanisms of the body. Forms the basis of immune responses.

ALBUMINS



Essential for maintaining osmotic balance, regulating the distribution of water between blood and tissues.

The Biological Transit Network

Electrolytes & Minerals

Na^+ Ca^{++} Mg^{++} HCO_3^- Cl^-

Small amounts of essential minerals maintaining electrical and chemical gradients.

Metabolic Cargo

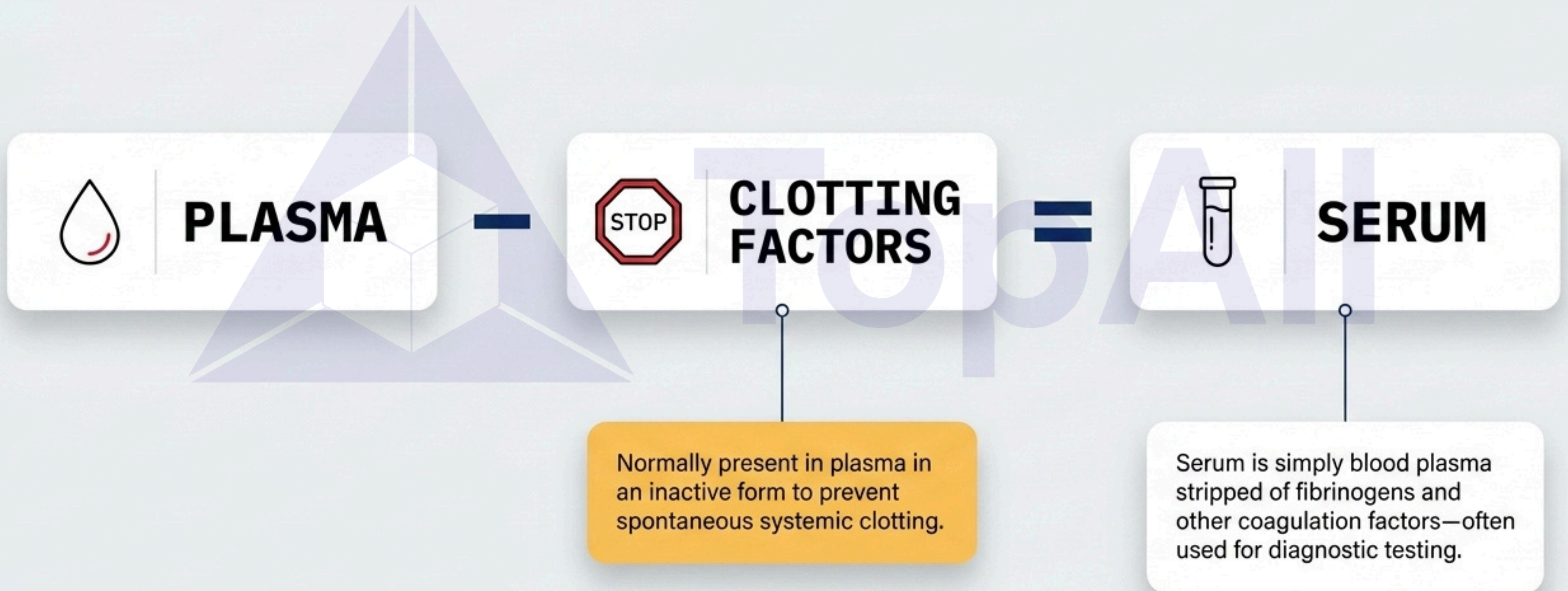
Glucose • Amino Acids • Lipids

Nutritional building blocks actively moving toward tissues for energy and repair.



These substances are always in active transit through the body via the plasma matrix.

Diagnostic Distinction: Plasma vs. Serum



Key Takeaway



Plasma is the dynamic, regulatory ecosystem of the human body.

- ✓ **Regulates:** Maintains fluid and osmotic balance via water and albumins.
- ✓ **Protects:** Defends against infection (globulins) and hemorrhage (fibrinogen).
- ✓ **Transports:** Acts as the universal highway for minerals, glucose, and amino acids.

It is not merely an inert carrier fluid, but a highly active, precisely balanced matrix essential for homeostasis and survival.



You've Learned the Theory.

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