

# Coagulation versus agglutination

Coagulation and agglutination have very little in common...

However, we often hear that when blood is typed, the sample "coagulates". However, this is a false statement. Thus:

- **Coagulation** = "clotting" of blood
  - is a chain of proteolytic reactions of plasma coagulation factors. The result is the polymerization of fibrin and the formation of a clot.
- **Agglutination** = clumping of blood cells
  - is an antigen-antibody reaction. Non-covalent reaction between plasma proteins and erythrocytes.

Comparison of hemocoagulation and hemagglutination

parameter	coagulation	agglutination
<i>Meaning</i>	Stop bleeding	Removal of non-self antigen
<i>Reaction</i>	Enzymatic proteolysis	Immune reactions (weak interactions)
<i>Reactants</i>	Plasma proteins	Erythrocyte antigens+antibodies in plasma
<i>Enzymatic reaction</i>	yeas	no
<i>Where the reaction takes place</i>	In plasma, blood cells are not needed	Plasma and erythrocytes
<i>Result</i>	Polymerized fibrin	Immunocomplexes