

# Agglutination

**Agglutination** (from the Latin *agglutinare* - joining) is the aggregation of various particles, such as blood cells, bacteria, etc. It is an immunological reaction in which a connection between Antibody and antigen on the cell surface is made. Because antibodies have multiple binding sites, cells aggregate on the surface of which antigens are located.

Coagulation and agglutination have little in common ...

However, we often hear that when typing blood, the sample "clots". However, this is a false statement. So:

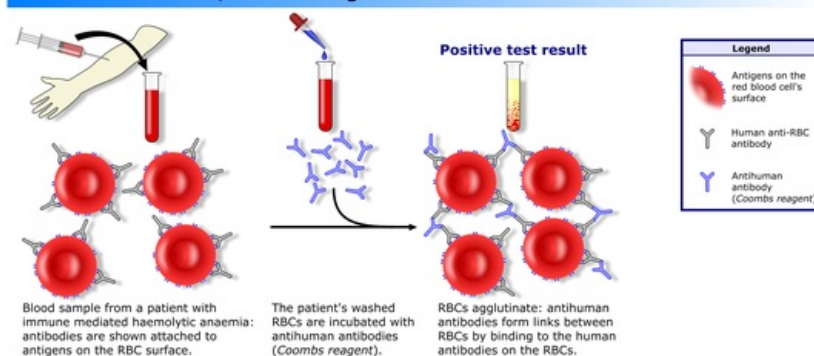
- **Coagulation** = "blood-clotting"

is a chain of proteolytic reactions of plasma coagulation factors. The result is the polymerization of fibrin and the formation of a precipitate.

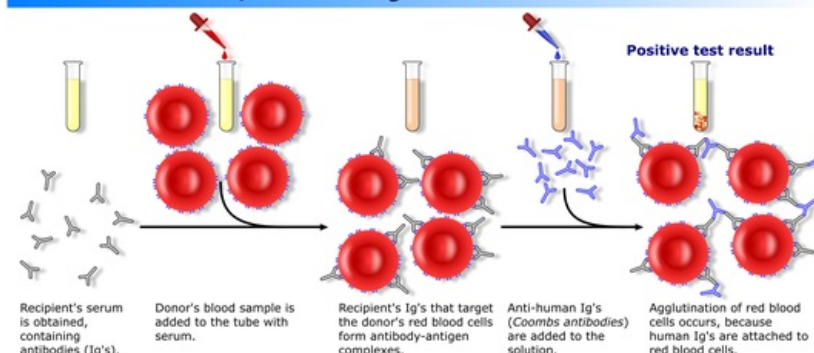
- **Agglutination** = blood cell aggregation

is a reaction of type antigen - antibody. Non-covalent reaction, between plasma proteins and erythrocytes.

## Direct Coombs test / Direct antiglobulin test



## Indirect Coombs test / Indirect antiglobulin test



Demonstration of agglutination - direct and indirect method

Comparison of haemocoagulation and haemagglutination

parameter	coagulation	agglutination
Sense	Bleeding arrest	Non-self antigen removal
Reactions	Enzymatic proteolysis	Immune reactions (Weak interactions)
Reactants	Plasma proteins	Erythrocyte antigens + antibodies in plasma
Enzymatic reaction	Yes	No
Where the reaction takes place	In plasma, blood cells are not needed	Plasma and erythrocytes
Result	Polymerized fibrin	Immunocomplexes

## Links

## Related Articles

- Agglutinin
- Antibody
- Coagulation

## External links

- Agglutination (Czech wikipedia)
- Agglutination (biology) (English wikipedia)

## Sources

ŠVÍGLEROVÁ, Jitka. *Agglutination* [online]. [cit. 2010-11-11]. <<https://web.archive.org/web/20160416224507/http://wiki.lfp-studium.cz/index.php/Agglutination>>.

