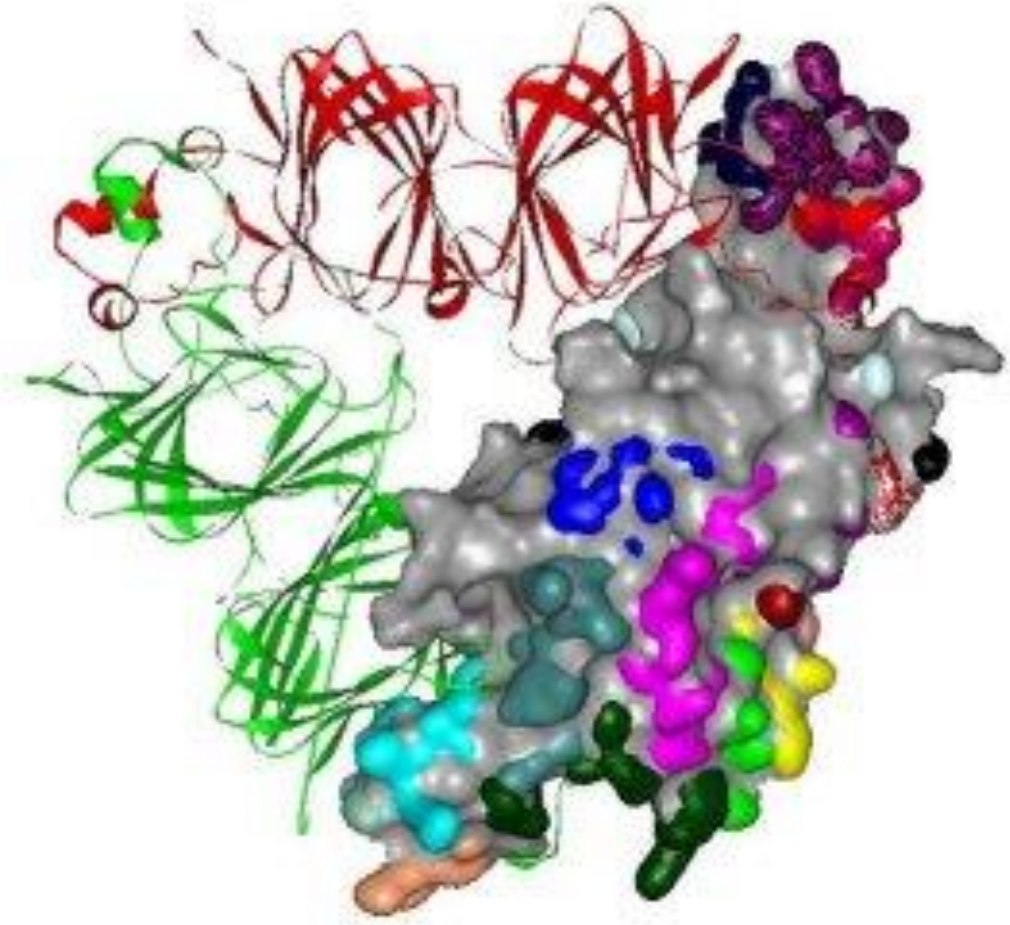
Globulins

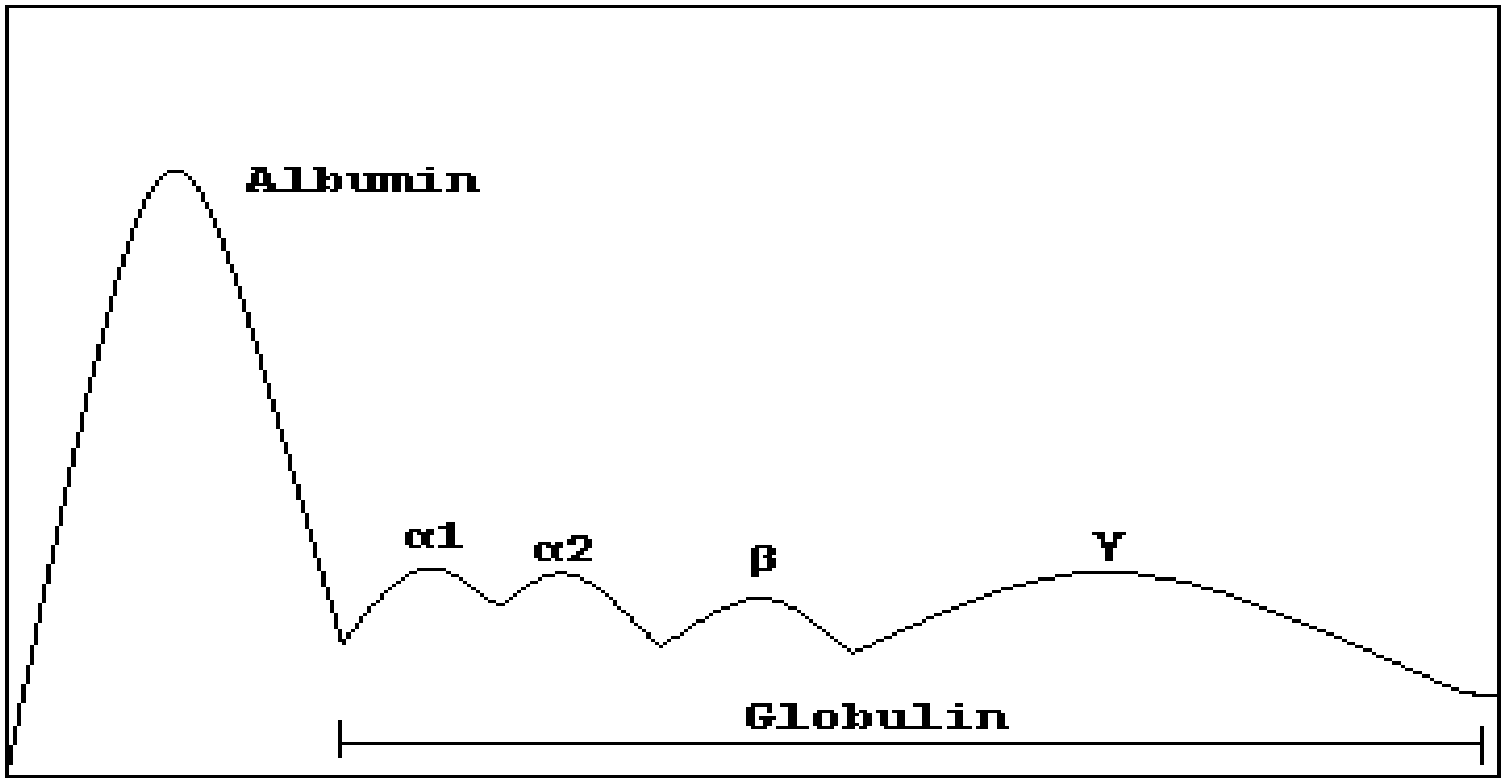


Globulins

- All plasma proteins except Albumin and Prealbumin are Globulins .
- The Globulins include carrier proteins, acute phase reactants, clotting factors, complement components and Immunoglobulins.
- Normal results of serum Globulin : 2.0 to 3.5 g/dL
- Protein Electrophoresis is used to categorize Globulins :
  - $Alpha_1$
  - $Alpha_2$
  - $Beta_1$
  - $Beta_2$
  - Gamma

Globulins

- Protein electrophoresis is used to categorize globulins :

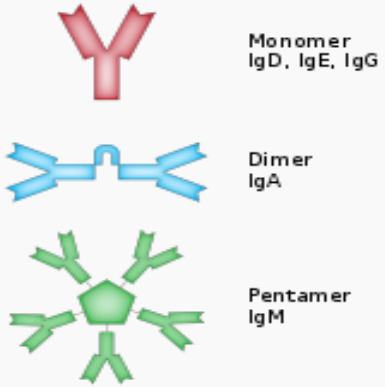


Globulins

Alpha globulins	*serpins:* Alpha 1-antichymotrypsin · Alpha 1-antitrypsin · Alpha 2-antiplasmin · Antithrombin *carrier proteins:* Retinol binding protein · Transcortin · Ceruloplasmin *other:* alpha-2-Macroglobulin · Haptoglobin · Heparin cofactor II · Orosomucoid
Beta globulins	*carrier proteins:* Sex hormone-binding globulin · Transferrin *other:* Angiostatin · Haemopexin · Beta-2 microglobulin · Factor H · Plasminogen · Properdin
Gamma globulins	Immunoglobulins
Other	Fibronectin · Macroglobulin/Microglobulin · Transcobalamin

Gamma Globulins

- The most significant Gamma Globulins are Immunoglobulins.
- Antibodies can come in different isotypes :
  - IgG : 650 to 1850 mg/dL
  - IgM : 75 to 300 mg/dL
  - IgA : 90 to 350 mg/dL
  - IgE
  - IgD

Name	Types	Description	Antibody Complexes
IgA	2	Found in mucosal areas, such as the gut, respiratory tract and urogenital tract, and prevents colonization by pathogens.Also found in saliva, tears, and breast milk.	
IgD	1	Functions mainly as an antigen receptor on B cells that have not been exposed to antigens. Its function is less defined than other isotypes.	
IgE	1	Binds to allergens and triggers histamine release from mast cells and basophils, and is involved in allergy. Also protects against parasitic worms.	
IgG	4	In its four forms, provides the majority of antibody-based immunity against invading pathogens. The only antibody capable of crossing the placenta to give passive immunity to fetus.	
IgM	1	Expressed on the surface of B cells and in a secreted form with very high avidity. Eliminates pathogens in the early stages of B cell mediated (humoral) immunity before there is sufficient IgG.	