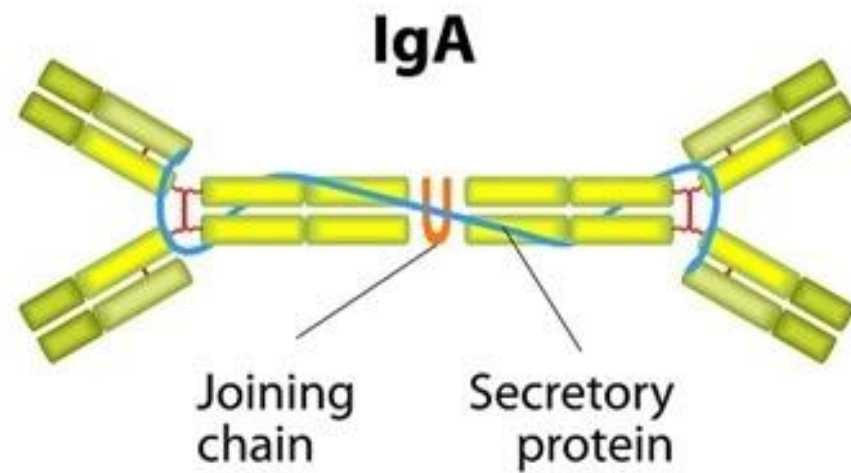
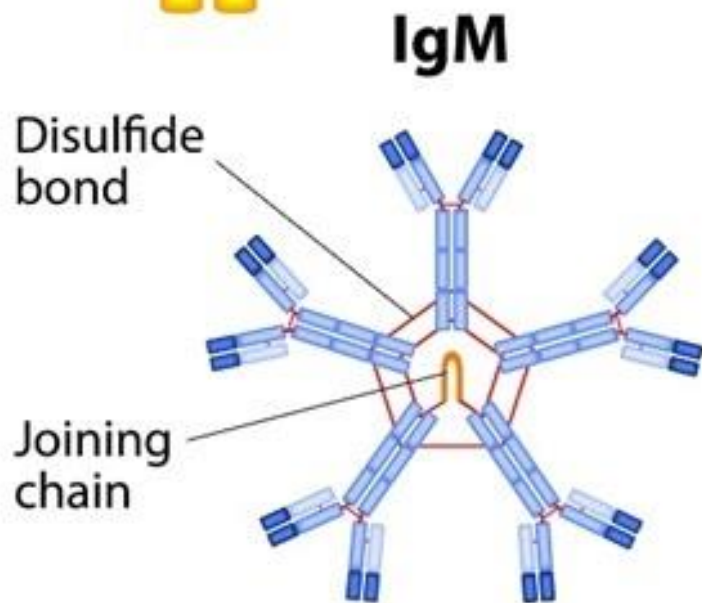
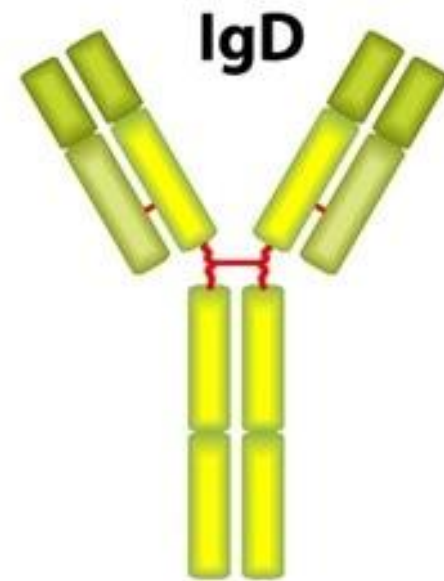
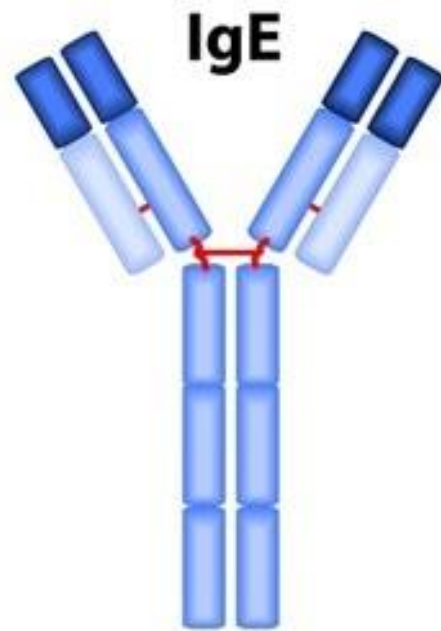
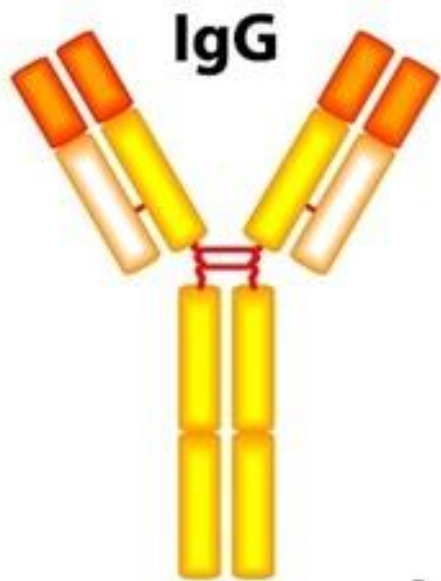


Types of antibodies



Classes of immunoglobulins

- There are 5 types of antibodies in mammals-IgA, IgG, IgM, IgE, and IgD.
- Each type has its different heavy chain
- Ig A- α
- Ig M- μ
- Ig G- γ
- Ig E- ϵ
- Ig D- δ

IgG

- Most abundant in the serum- 80% of the total serum antibodies
- In humans, there are four type of IgG- IgG1, IgG2, IgG3, and IgG4
- Can cross placenta, transferring immunity from mother to fetus.

IgE

- Immediate hypersensitivity is mediated by IgE eg in asthma
- Produced in Allergic reaction
- Able to bind with mast cells and blood basophils-give rise to allergic manifestation

Ig D

- Constitute 0.2% of total serum antibodies
- No biological function has been identified

Ig A

- Constitute 10-15% of total serum antibodies
- Present in the secretions- tears, breast milk, saliva, mucus
- Two types-IgA1 and IgA2
- Present in the mother milk-colostrum
- Provide immunity to the new born
- IgA is dimeric

IgM

- First produced antibody by B cell
- 5-10%
- IgM and IgD : Also found on the B cell surface- serve as Bcell Receptors
- Secreted as pentameric molecule
- primary response in allergic reaction
- First produced in the neonate
- Helps in complement activation

Effector functions

- **Opsonization:** antibody together with other complements, covers antigens and prepare it to phagocytosed by phagocytic cells. IgG is the opsonising immunoglobulin
- **Toxin/viral neutralization:** exotoxins secreted by some bacteria can be neutralized by these antibodies. IgM, IgG and IgA are found to neutralize some viral particles.
- **Complement activation:** it's a series of enzymatic events that can be initiated by antigens or binding to the antibodies. IgM and IgG are able to start complement system.
- **Antibody dependent cell mediated toxicity: ADCC:** natural killer cells recognises infected cells and malignant cells by antibodies bound on the surface of these cells.