Immunoglobin D (IgD)

The Ig(D) is a glycoprotein immunoglobin found in blood serum as well as on the surface of B-cell. It is Y-shaped contain two pairs of polypeptide chains, the light chains and heavy chains.

The two light chains are Kappa (K) or Lambda(λ) type. The two heavy chains are delta(δ) type.

The light chain consists of two domains namely a single constant domain (C_L) and a single variable domain (V_L).

The heavy chain contains of 4 domains namely a single variable domain (V_H) and 3 constant domains (C_{H1}, C_{H2} and C_{H3}).

It is a primitive antibody as it is found from cartilagenous fishes to mammals except birds.

IgD is slightly larger than IgG having a molecular weight of 180,000. The large size of IgD may be associated with an external hinge region. IgD is limited to blood stream. The average serum level is 0.03 mg/ml. The average coefficient sedimentation is 7S.

IgD is rich in carbohydrates. About 12% of its weight is formed of polysaccharides. The half life of IgD is 2-3 days.

The two subclass of IgD are IgD1 and IgD2. It is found associated with the B-lymphocytes.

IgD has not been shown to have antibody activity and it does not mediate any of the effector function attributed to immunoglobin.

IgD which is found associated with the surface of B-lymphocytes along with IgM is found to act as an antigen receptor.

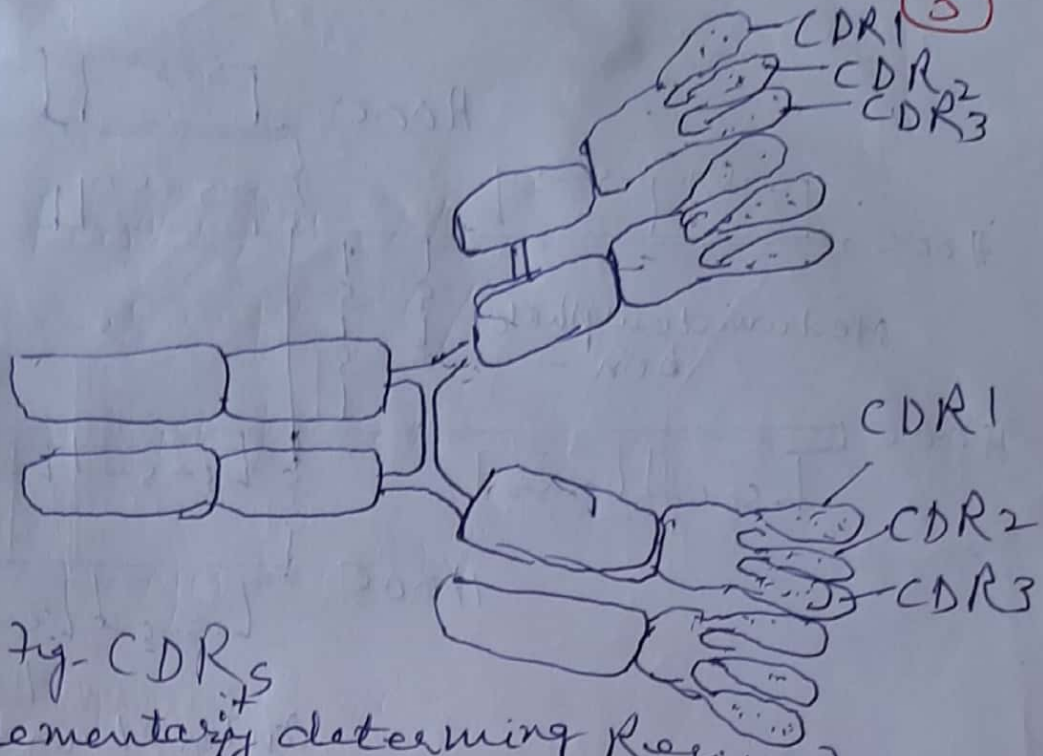

Fig- CDRs
(Complementarity determining Regions)

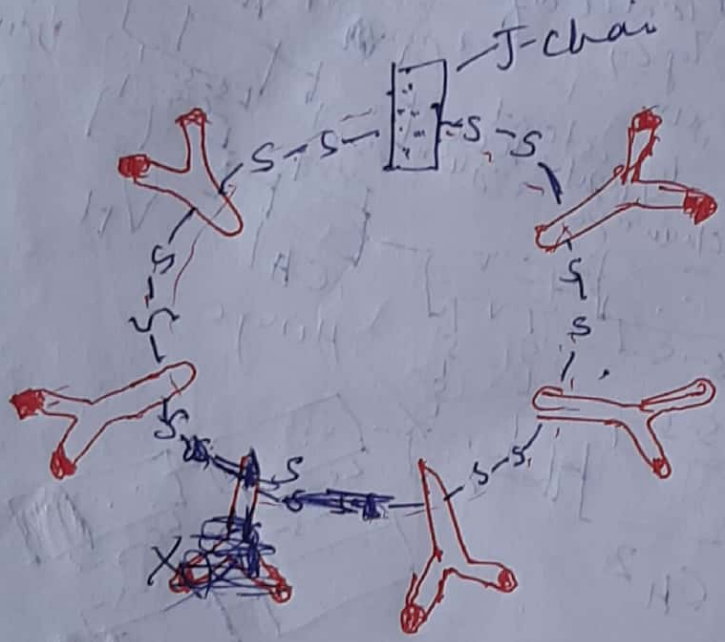

Fig- Structure of IgM showing ~~five~~
Five Subunits joined by J-chain

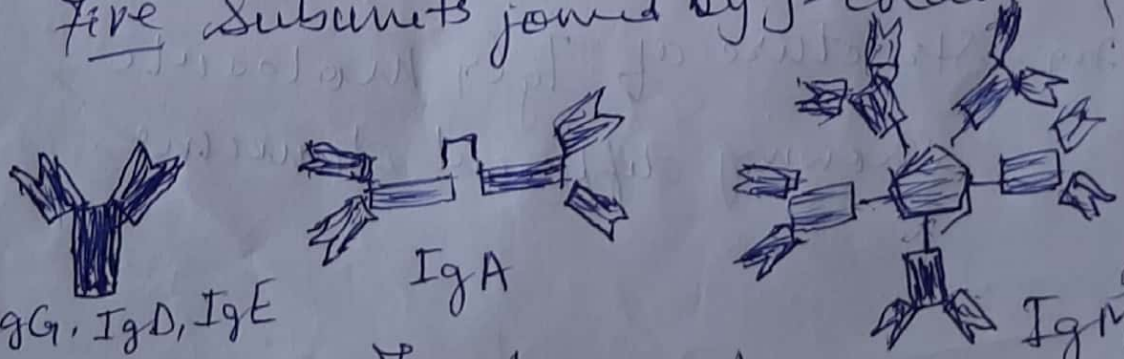

Fig- The five types of Immunoglobin