

● Haemoglobin transport  $O_2$  from lungs to cell and  $CO_2$  from cells to lung.

② Haemocyanin:

- It is blue coloured pigment.
- Redfield (1934) did much work on this pigment.
- It is formed of Copper and protein.
- The molecule of haemocyanin consists of one copper atom and a peptide chain of about 200 amino acids.
- Its molecular weight is differ in different animal groups. e.g. for Helix it is 66,50,000 and for Patinurus it is 4,47,000 daltons.
- Like all proteins, haemocyanin absorb ultra-violet rays.
- It is used in transport of gases and in storage.
- Haemocyanin occurs in the blood plasma of Arthropods such as, Limulus and Daphnia and molluscs such as Sepia, Octopus and Helix.
- Haemocyanin only occurs as large extent extracellular molecules and is never found in cells. The number of subunits vary from a few to many in haemocyanin. The pigment gets saturated with oxygen at different concentration in different species. In oxygenated state haemocyanin is bluish white it is colourless in

(5)

deoxygenated form. The oxygen transporting capacity of haemocyanin is less than that of haemoglobin.

### (3) Chlorocruorin:

Chlorocruorin is green coloured metallo-protein found in the plasma of some Polychaetes.

- It also exists in oxygenated and reduced form.

- The metal which is found is also iron (Fe), the metalloporphyrin is similar to heme of haemoglobin except that one vinyl group ( $\text{CH}=\text{CH}_2$ ) is replaced by formyl group ( $\text{O}=\text{CH}$ ) in chlorocruorin.

- This porphyrin is called chlorocruorin.

### (4) Haemoerythrin :-

- It is reddish-violet coloured pigment.

- It is formed of iron and protein. The iron is directly attached to the protein and there is no porphyrin.

- The molecular weight varied from 66,000 to 12000 daltons.

- It occurs in the corpuscles of Sipunculus and the plasma of the other organisms.

- It is present in the brachiopods, Lingula, Sipunculids, parapulids and the polychaetes Megelona.

Teacher Signature

### ⑤ Pinnaglobin:

- It is a brown coloured pigment.
- It occurs in the body fluids of Pinna.
- It is magnese containing blood pigment.

### ⑥ Vanadium:

- It is present in the blood cells (Vanadocyte) of Ascidians.
- It also occurs in the plasma of certain other animals.

### ⑦ Echinochrome:

- It is red coloured pigment.
- It is iron containing pigment.
- It occurs in the coelomic fluids of Sea Urchin.

### ⑧ Molpadin:

- It occurs in Holothurian called Malpadia.

Teacher's Signature .....