The most abundant, smallest protein in the body is **ALBUMIN** has MW = 68,000, so only a small fraction would be filtered, in normally functioning kidney thus it will not be present in the urine (reabsorbed).

- Hb also MW = 68,000 but not filtered - inside RBC, only those in plasma can be filtered.
- If huge haemolysis occurs → Hb will clog up the filter, cause haematuria.

* For any given molecular weight ⇒ the amount of filtrations for devotions is HIGHER than in the kidneys. It tells us that the filter has a FIXED negative charge - will repel negatively charged ions.

**STARLING'S EQUATION**

> The forces for filtration = \( P_{cap} \) (hydrostatic pressure in glomerular cap) + \( \Pi_{cap} \) (colonic pressure in \( \Delta C = 0 \), usually)

> Those opposing filtration = \( P_{oc} + \Pi_{oc} \)

The Glomercular filtration force amount fluid filtered from glomercular cap → R.C

\[
\text{f} = \alpha \times (P_{cap} + \Pi_{cap}) - (P_{oc} + \Pi_{oc})
\]

ie. \( \alpha \times (45 + 0) - (10 + 25) \) a filtration occurs \( \Pi_{cap} \rightarrow 35 \)

\( \alpha + 10 \) = net filtration force, if 25 \( \rightarrow 35 \)

=0 i.e. filtration pressure equilibrium

Introduce constant i.e. \( K_f \) (filtration coefficient = Product of glomercular capillary permeability and area of capillary available for filtration)

\[
\text{GFR} = K_f [(P_{cap} + \Pi_{oc})] - [C (P_{oc} + \Pi_{cap})]
\]

Normal GFR = 120mL min^-1 or 180L day^-1

Lecture 3 - Diagram 3 - Shows that the \([Na^+]_e\) is constant in the efferent, efferent arterioles and R.C

**WHY?**

Need to understand a solute's conc. is determined by no. of molecules but...