# Extracellular proteins

Usually are proteins calculated at mass units, but our implementation calculate their amount of substance, because the molar concentration *c* plays the role in osmotic pressure *p* by Eq1, where *R* is gas constant and *T* is temperature.

We can assume, that average molar mass of globulins is 34.5 kDa and molar mass of albumin is 66.5 kDa. And also that the mass of albumins is about 60% of total plasmatic protein mass.

Table I, Typical plasma proteins concentrations [mmol/l]

|  |  |  |
| --- | --- | --- |
| Total | Albumin | Globulins |
| 1.44 | 0.63 | 0.81 |

The model of proteins (Fig2) has four main compartments: blood plasma, upper torso interstitium, middle torso interstitium and lower torso interstitium. Normal concentrations at interstitial compartments are listed in table Table II. Normal proteins synthesis and degradation of 10 mg/min can be changed with deviation of their colloid pressure or plasmatic concentration. Movement between compartments is caused by capillary membrane concentration gradient or lymph flow from interstitium to blood as implemented in scheme of Fig2. And special changes of plasmatic concentration could be done by intravenous therapy, hemorrhage or pathological states, when proteins enter the peritoneum space or primary urine filtrate.

Table II, Typical protein concentrations in interstitium [mmol/l]

|  |  |  |
| --- | --- | --- |
| Upper torso | Middle torso | Lower torso |
| 0.6 | 0.48 | 0.4 |

