

Binding constants for Indium(III) with human serum transferrin

AssgharAmiri*, Roya Kaviri Zadeh, Mohammad Rahimi Pour

Department of Chemistry, Payame Noor University, Iran

Transferrin (Tf) is the blood iron transport protein with two globular Lobes, the C-and N- Lobes, both of which bind Fe^{+3} [1].

Indium is widely used for imaging tumor cells. The binding of In^{+3} to human serum transferrin in 0.01M hepes buffer, PH 7.4 , 5mM Sodium bicarbonate and Nitritotriacetic acid (NTA) in ratio of 10:1 at 25^oC has been studied. Indium binding constants for transferrin were measured by difference ultraviolet spectrophotometry at 255nm.

The observed binding constants are $LogK_1=17.12 \pm 0.15$ and $LogK_2=15.91 \pm 0.51$

These Constants are conditional constants for pH 7.4 and 5Mm bicarbonate and pH dependent. Since blood serum Tf is not normally saturated with iron, it has an appreciable capacity for transport of Indium(III) ions through the blood.

References:

- [1] Amiri A, Fatemi SJ, Fatemi SN (2007) *Biometals* 20: 159_ 163.