



Physiology

Lab 5

Second stage



جامعة الزهراء للعلوم
Al-Zahraa University for Women

By:

A.L. Riham Badr Nasser

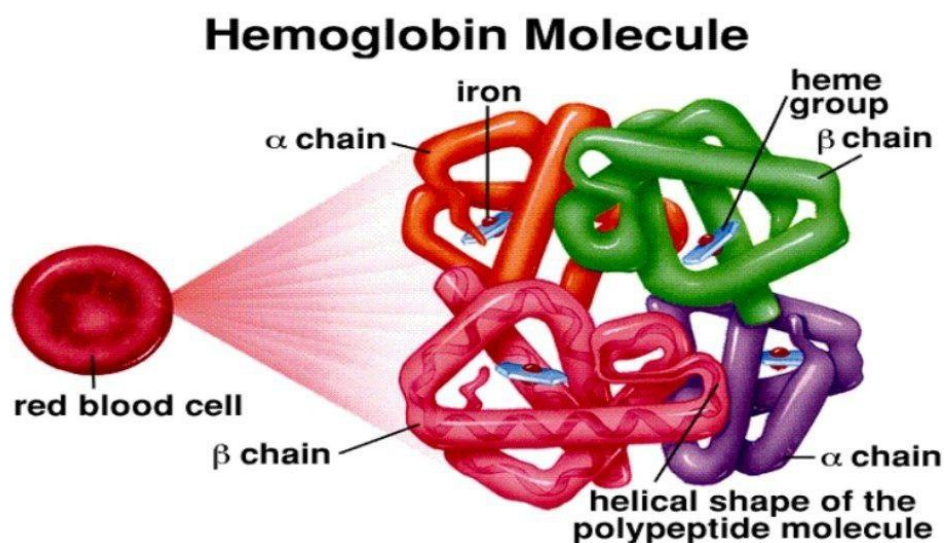
A. L. Mustafa Abd Al Hussein

A. L. Zeinab Amouri

Hemoglobin

HAEMOGLBIN ESTIMATION(Hb)

Is the most important pigment of the blood imparting red color to it. The main function of Hb is oxygen carrying from lungs to the body tissues and the CO₂ transport in the blood. $1 \text{ Hb} = 4\text{Fe} = 4 \text{ O}_2$



The object of estimating Hb is to determine the O₂ carrying capacity of the blood, the result assist in

- a. The aim of the experiment is to measure the amount of hemoglobin in the given sample of blood
- b. detecting disease which cause a deficiency of excess of Hb
- c. studying changes in Hb concentration before and after operation and blood transfusion

Medical conditions

anemia :- is a decrease of hemoglobin concentration. Polycythemia is an increase of Hb oncentration

Types of anemia:

Iron deficiency anemia: commonest cause of anemia in most parts of the world cause either due to loss of iron due to bleeding or an inadequate diet or mal-absorption

Megaloblastic anemia: caused by deficiency of vitamin B₁₂ or folate deficiency or both of them

Pernicious anemia: an autoimmune destruction of gastric parietal cells (and autoantibody inactivation of intrinsic factor) leading to a lack of intrinsic factor which important for vitamin B₁₂ absorption in the gut

APPARATUS REQUIRED:

alcohol, cotton, lancet, Sahli- haemoglobinometer, 0.1N HCl, Distilled water

procedure

- 1- Fill the (shali's tube) to the 20 mark
- 2-Draw blood by use Hb pipette to the 0.02 ml
- 3-Expel the blood into the shali tub containing the HCL solution.

- 4- Mix the content quickly by glass-rod and leave for 10 min.
- 5- Add distilled water drop by drop, until the color match with stander.

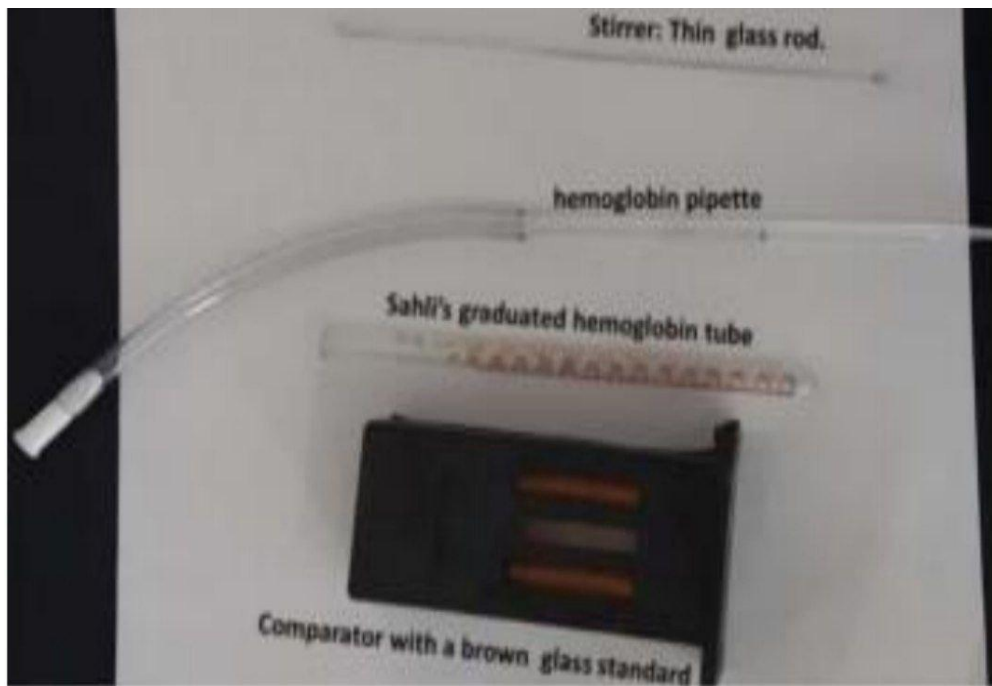


Figure: Showing Components Of a Sahli- Hellige Haemoglobinometer

Variant forms of hemoglobin

Oxyhemoglobin: hemoglobin combined with oxygen.

Carbaminohemoglobin: hemoglobin combined with CO₂.

Methemoglobin: Ferrous iron is converted into ferric iron.

Normal values

Male = 14-18 g/dl

Female = 12-16 g/dl

6 months - 6 years = 9.5 -14 g/dl