**Lab (3)**

**Estimation of total protein in milk and egg**

**Method:**

**1-**Set up a series of test tubes as follow:

|  |  |  |  |
| --- | --- | --- | --- |
| **Tube** | **Protein Stock Solution**  **( 140 mg/dl)** | **water** | **Protein concentration mg/dl** |
| **1** | 4.5 | 1.5 |  |
| **2** | 3 | 3 |  |
| **3** | 2.4 | 3.6 |  |
| **4** | 1.5 | 4.5 |  |
| **5** | 0.9 | 5.1 |  |
| **6** | 0.3 | 5.7 |  |
| **7( Blank)** | 0 | 6 |  |

2-Set another 9test tube labeled 1-7 and pipette in each one Add 8 ml of sulfosalicylic acid

|  |  |
| --- | --- |
| **Tube** | **sulfosalicylic acid** |
| **1** | 8 ml |
| **2** | 8 ml |
| **3** | 8 ml |
| **4** | 8 ml |
| **5** | 8 ml |
| **6** | 8 ml |
| **7( Blank)** | 8 ml |
| **Egg Sample** | 8 ml |
| **Milk sample** | 8 ml |

3-Into tube 1 pipette 2 ml of protein solution 1, into tube 2 pipette 2 ml of protein solution 2 etc. For the egg Sample pipette 0.5 ml of the Sample and 1.5 ml water, for the milk sample pipette 2ml of the sample.

4-Mix contents of each tube well and allow standing for 5 minutes.

5-Using solution 7 (Blank) to set transmittance at 100 at **500 nm**.

6-Then use solutions from 1-6, to recorded respective **transmittance** of each suspension.

**Results:**

|  |  |  |
| --- | --- | --- |
| **Tube** | **Transmittance at 500 nm** | **Protein concentration mg/dl** |
| **7( Blank)** | 100 % |  |
| **1** |  |  |
| **2** |  |  |
| **3** |  |  |
| **4** |  |  |
| **5** |  |  |
| **6** |  |  |
| **egg Sample** |  |  |
| **Milk sample** |  |  |

- Plot transmittance against protein concentration on semi-logarithm paper (standard curve).

-Determine the protein concentration of the “unknown sample” from the standard curve.

- Calculate the concentration of protein in the original sample (g/100 ml)

**Calculations:**

The concentration from the standard curve (mg/dl) x dilution factor= ------------- mg/dl

Egg=…………..

Milk =………….