

# Essay on assessment form practical 1 milk biochemistry metabolism

[Environment](#), [Animals](#)



**ASSIGN  
BUSTER**

**Prac Group:**

Prac Date:

Partners:

**A. Analysis of practical results**

1. Produce a Standard Curve that enables you to quantify the amount of protein present in the diluted skim milk, diluted whey and deproteinate whey samples.

Draw a graph of the standard curve for BSA. Use Excel to graph a scatter plot and draw a linear regression curve using absorbance values vs concentration (in  $\mu\text{g/mL}$ ) for each standard. Give the graph a title and label the axes.

2. Report concentrations and percentages of the various protein fractions in undiluted skim milk as determined in the practical.

**Protein fraction**

Protein concentration

( $\mu\text{g mL}^{-1}$ )

**Percentage protein in each of the fractions**

Casein protein

Whey protein

Small molecular mass proteins

**B. Questions on Milk Biochemistry & Metabolism**

3. Milk is the primary food for young mammals. Which major and minor classes of biologically important molecules constitute the nutritional value of milk? Indicate 3 classes each in the table below.

4. Which biochemical properties of milk make it a good food for endothermic mammals with a high metabolic rate?

(about 30 words)

5. Heat treatment (72 °C for 15 seconds), the so-called pasteurisation, reduces the number of pathogenic microbes that may be present in milk obtained from animals.

### **How will this process affect**

a) The casein proteins? (About 30 words)

b) The whey proteins? (About 30 words)

6. What biochemical properties of casein make it an easily digestible protein (about 30 words)

7. Why do adults frequently have problems with the ingestion of milk? (about 30 words)

8. How is galactose fed into the glycolytic pathway?

(do not draw structures, but clearly describe the molecules and intermediates involved;

no more than 50 words)

**Iyamoto, Y., et al., Am. J. Physiol. Renal. Physiol., 252, 670-F677 (1987)**

Lawrence K., Creamer, L. K., et al., Journal of Dairy Science, 81, 3004-3012 (1998)