

Date ..... Name ..... Group .....

**Lab report form for the practical lesson on biochemistry**

***Topic: Basic organic reactions. Properties of proteins. Electrophoresis***

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**Task 1 - Electrophoresis of serum proteins in 0.5% agarose**

**Principle:**

**Result:**

*Describe or make a drawing of the protein bands that you can see on the stained agarose gel.*

**Task 2: Basic organic reaction**

***2.1 Oxidation of alcohols***

**Principle:**

*Write structural formulas of all three alcohols and the scheme of their oxidation.*

**Results:**

	A	B	C	W
Final color after reaction with $\text{KMnO}_4$				

**Conclusion:*****2.2 Coupling reactions of diazonium salts*****Principle:**

Use structural formulas

**Results:****Conclusion:**

## 2.3 Reactions of carbonyl group

### Principle:

*Provide a detailed description of chemistry of each of the used test.*

### Results:

*Write down your results (pos./neg., and record also the resulting color) of all tests for individual samples in the table provided. Conclude whether the obtained results meet theoretical expectations.*

	Acetone	Formaldehyde	Acetic acid	Formic acid	Water
<b>Legal</b>		X		X	X
<b>Fehling</b>	X			X	X
<b>Tollens</b>	X		X		
<b>Schiff</b>	X			X	

### Conclusion:

## ***2.4 Esterification***

### **Principle:**

Using structural formulas write down the equation of esterification you performed.

**Observation:**

**Conclusion:**

## **Task 3: Reversible precipitation of proteins**

### ***3.1 Precipitation of egg-white protein with sodium chloride and its reversal***

#### **Principle:**

**Results/Observations:**

**Conclusion:**

## **Task 4: Precipitation of proteins by denaturation**

### **Principle:**

*What is denaturation?*

### **Result/observation:**

*4.1 Precipitation of proteins with heavy metal salts*

*4.2 Precipitation of proteins with mineral acids*

*4.3 Precipitation of proteins with organic acids*

*4.4 Precipitation of proteins with high temperature (boiling)*

### **Conclusion:**

*Summarize what agents caused protein denaturation. Why in certain conditions denaturation did not lead to protein precipitation?*