Experiment No. 7

**Tosylation of 7-hydroxyl-3-methylcoumarin and purification**

**Aim**: Tosylation of 7-hydroxyl-3-methylcoumarin and purification

**Chemical**: 7-hydroxyl-3-methylcoumarin (product of experiment no.- 3), benzenesulfonyl   
 chloride, potassium carbonate, and acetone

**Apparatus**: 100 mL round bottom flask, 250 mL conical flask, separating funnel, funnel, filter   
 paper, condenser, stir bar, hot plate, heating mantle, thermometer, glass column,   
 and test tubes.

**General procedure:**

To a room temperature solution of 7-hydroxyl-3-methylcoumarin (1 equivalent) in acetone (15 mL), K2CO3 (1.2 equivalent) was added. The mixture stirred at room temperature for 15 min. Then, benzenesulfonyl chloride (1.2 equivalent) was added into it and the mixture refluxed at 60 °C for 3 hrs. Reaction was monitored by TLC, after completion, solvent was evaporated under vacuum. Then the residue was extracted with ethyl acetate and washed several times with water (50 mL). After that, the organic layer was dried over MgSO4, filtered, and concentrated under vacuum. The product was purified by column chromatography on silica gel.



**Result**: The product obtained was:

1.

2.

3.

4.

5.

Yield (%):

Melting point:

IR:

TLC:

Questions:

1. What is the role of K2CO3 in this reaction and how it influence the reaction?

2. Write three biological importance of coumarin and its derivatives?