Synthesis procedure

- Weight out a portion of 0.5 g of salicylic acid and place it in a 50 mL Erlenmeyer flask.
- Measure out a volume of 3.0 mL of acetic anhydride and add it to that Erlenmeyer flask in the fume hood. (Don't let the acetic anhydride contact your skin).
- Carefully add 1-2 drops of 85 % phosphoric acid which is a catalyst, to the reaction flask and swirl the flask in order to mix everything thoroughly.
- Heat the reaction mixture in a beaker of warm water (70-80 °C) for about 10 minutes to dissolve all the solid material and for the reaction to go to completion. (Make sure to do this step in the fume hood).
- After the heating process, add 10 drops of distilled water cautiously and swirl the flask to aid the hydrolysis of excess acetic anhydride to acetic acid.
- Cool the flask in an ice bath and scratch the wall of the flask with a glass rod to induce the crystallization of the product.
- Filter the crystals of solid aspirin through a pre-weighted filter paper using a Buchner funnel and wash with 2-3 mL of cooled water.
- Place the filter paper with solid aspin on a watch glass and let the crystals to be dried.
- Measure the weight of ashinn and the filter gape and reduce the weight of filter paper to obtained be cluar mass of a parts.
- Perfume a TLC using 4 : 1 ethyl acetate : methylene chloride solvent system to confirm the formation of the product.
- Further purification can be done by recrystallization with a mixed solvent of ethanol-water.
- Measure the melting point of aspirin using melt-temp apparatus.
- Calculate the percentage yield of aspirin by dividing the actual yield from the theoretical yield and multiplying by 100%. (Equation 1)

% yield = $\frac{actual yield}{calculated yield} \times 100 \%$