

A three-step synthesis of trans-cinnamaldehyde was performed from trans-cinnamic acid, in an attempt to produce cinnamon. This molecule is responsible for the taste and smell of cinnamon. The reason why this target was interesting was because of our interests in finding out how to synthesize a delicious ingredient commonly found in food and lotion. Moreover, the types of reactions used to synthesize cinnamon were: oxidation of a secondary alcohol, reduction of an acid chloride and substitution of an alcohol to a chloride. The oxidation of a secondary alcohol reaction was interesting because we had to create a  $\text{KMnO}_4$ -Kieselguhr reactant and we were intrigued by the purple color of the reactant and how this color would lead to the brown color of cinnamon. Another purpose of conducting this three-step synthesis of trans-cinnamaldehyde was to find a greener synthetic route; to do this the  $\text{SOCl}_2$  reactant was substituted with oxalyl chloride and the THF solvent was replaced by hexane.