

Project: Synthesis of Nepetalactol  
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Catnip (nepetalactol) is commonly used as a stimulant substance in cat toys. This cyclic alcohol can be synthesized in a three-step process beginning with citronellal. In three steps, we synthesized nepetalactol by performing a oxidation reaction, a cyclization reaction, and a substitution reaction. Step two of our synthesis was interesting because we ended up with two molecules of similar structure but with different polarities, and we had to purify our desired product using chromatographic methods. We also re-synthesized nepetalactol using a greener solvent (propylene carbonate in place of dichloromethane) in step 1 in order to improve our reaction's environmental impact. We also repeated a step 1 using a greener reagent (hydrogen peroxide in place of selenium dioxide). The synthesis of catnip has real-world applications as many cat owners use the substance every day, and using a greener alternative for its synthesis will reduce hazards and waste.