


**SYNTHESIS OF VANILLIN DERIVATIVE USING $\text{CuCl}(\text{OH})\cdot\text{TMEDA}$
CATALYST**

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STATEMENT OF THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT**SYNTHESIS OF VANILLIN DERIVATIVE USING CUCL(OH).TMEDA
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Vanillin has phenolic group in its structure which enabled this molecule to become antioxidant. This research investigated synthesis reaction of vanillin derivatives using a metal catalyst, namely CuCl(OH).TMEDA. This synthesis reaction used oxidative coupling mechanism under aerobic condition at room temperature. The synthesis product was analyzed using thin layer chromatography and further purified with column chromatography. One isolate from column chromatography was analyzed using LC/MS/MS. LC/MS/MS spectrum supported the facts that the synthesis product was a dimer of vanillin. The isolate product of synthesis reaction was analyzed for its antioxidant activity using DPPH radical scavenging assay. According to previous research, dimer of phenol has higher antioxidant activity than its monomer, however dimer of vanillin synthesized using CuCl(OH).TMEDA has lower antioxidant activity. The decrease in antioxidant activity was suspected from the structure which present in keto form.

Keywords: Vanillin, CuCl(OH).TMEDA, Catalyst, Synthesis, Dimerization, Antioxidant



DEDICATION

I dedicate this thesis to my beloved family and close friends that always support me during the writing of this thesis.



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