

An analog of an antibiotic ester was synthesized by a direct condensation between a carboxylic acid, 6-hydroxy-2-naphthoic acid, and methanol, using a newly discovered reusable catalyst, $\text{HClO}_4\text{-SiO}_4$. A butyl group was added to the resulting ester by Williamson ether synthesis to yield methyl 6-butoxy-2-naphthoate. A microbial test using *E. coli* was used to test the antimicrobial activity of the synthesized ester and the product of the Williamson ether synthesis. Green chemistry was used to make the first step of this reaction go faster using the synthesized catalyst $\text{HClO}_4\text{-SiO}_4$.