

**OPTIMIZATION OF PRE-TREATMENT PROCESS IN SHIKIMIC ACID  
EXTRACTION FROM PALM OIL MILL EFFLUENT (POME)**

By

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BACHELOR'S DEGREE  
in

CHEMICAL ENGINEERING – PHARMACEUTICAL ENGINEERING  
CONCENTRATION  
LIFE SCIENCES AND TECHNOLOGY

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August 2018

### STATEMENT BY 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

### OPTIMIZATION OF SHIKIMIC ACID EXTRACTION FROM PALM OIL MILL EFFLUENT

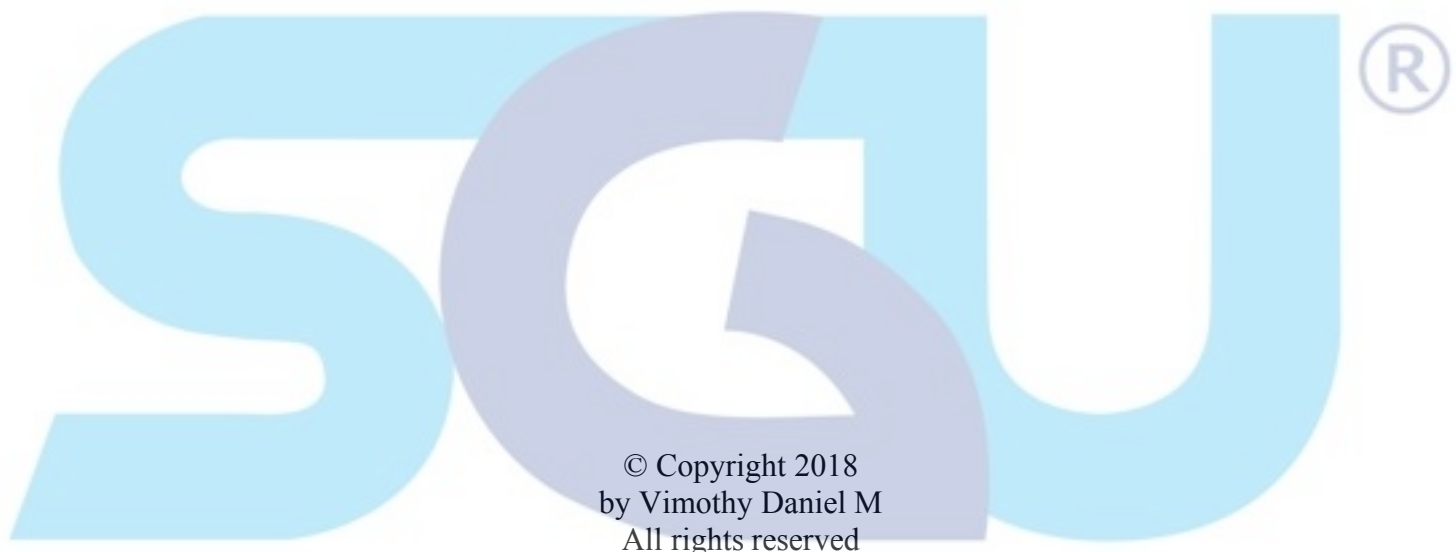
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The global pandemic spread of influenza like bird flu and swine flu are forcing a bigger production of anti-influenza drug called Oseltamivir phosphate. The drug is made by synthesizing a compound named shikimic acid. Although the demand of the drug increases, the source of shikimic acid material is limited. Meanwhile, palm oil mill effluent (POME), a waste generated from palm oil industry is provenly rich in phytonutrients. This research aims to improve the shikimic extraction process from palm oil mill effluent by pre-treating the POME. Three pre-treatments were done on the POME which are solvent-extraction method, sedimentation method, and combination of solvent-extraction and sedimentation method. Sedimentation used the centrifugal principle and solvent-extraction used n-hexane as the solvent. Detection of shikimic acid was done using TLC method and FT-IR instrument, while HPLC was used to measure the amount of shikimic acid extracted. Yield of shikimic acid obtained after solvent-extraction pre-treatment (0.0795%) was better than the sedimentation pre-treatment (0.015%). Also, the solvent-extraction pre-treatment was more efficient (87.51%) than sedimentation pre-treatment (68.15%) in removing oil and grease. However, the best result was produced from the combination of both pre-treatments.

*Keywords: Shikimic Acid, Palm Oil Mill Effluent, HPLC, FT-IR, TLC, Pre-treatment*



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## DEDICATION

I dedicate this thesis works for my family,  
friends, and my country, Indonesia.



## ACKNOWLEDGEMENTS

Foremost, I would like to thank God for His endless blessing during this thesis period, who gave me strength to finish my thesis, despite so many problems I faced.

Next, I want to send my biggest thanks to my family for their support when I am down during this journey.

To Mam Evita, for her guidance, patience, time, and efforts for me, as my Advisor during my thesis journey. Thank you for all those things you gave Mam Evita. Also for my Co-Advisor, Kak Hery Sutanto, who also helped me in finishing my thesis by guiding and gave me advised especially in chemistry parts.

To all the lab assistants, Kak Rara, Kak Roziq, Kak Tiwi, Kak Tabligh, Kak Gerald, for always taking care of us with the supervision and knowledge in the laboratory.

Also, for my fellow friends who worked in SGU laboratory, which has been a good partner, and took care of each other back. Exclusively for my PE-8 friends, Jimmy, Sylvi, Mila, Claire, and Tiffany, who always been in hard and good times. For Biomedical Engineering-8 students, Joshua, Vanessa, Bilhan, Indes, Alfin, Deby, James. For SEE-8 students, Barry, Rachmat, Monic, Vincent. For Food Tech 8 students, Gabriella and Jevon. Especially to someone special who always gave me much of her attention, so I could not make it without her support, Amanda Celina.

Last but not least, I want to thank my friends, Abednego, Kevin Dendy, Clive, Ezra, and Jovan for cheered me up in my free time during this thesis period.

Thank you for all the person who contributes in this thesis but I could not have mentioned it one by one, Pak Ikhwan and Pak Eko from Universitas Indonesia, Pak Ivan Manalu and Pak Aleksius from Belitung, and others.

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