EVALUATION OF ALPHA GLUCOSIDASE INHIBITORS FROM INDONESIAN MEDICINAL PLANTS

By

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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

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Alpha-glucosidase inhibitors are oral anti-diabetic drugs which are used for diabetes treatment by retarding the carbohydrate digestion. In this research, 57 samples which mostly traditionally utilized for diabetes treatment and other medicinal treatments have been evaluated in vitro for its alpha-glucosidase inhibition activity. Among those plants, the methanol extract of *Uncaria gambir, Musa paradisiaca, Momordica charantia* and *Allium cepa* showed the high inhibitory activity with inhibition activity above 75%. Antioxidant activity analysis of the five best samples showed positif correlation with AGIs.*Uncaria gambir* showed highest inhibitory among five samples (100%, 0.02 g/ml).Therefore, it was further extracted with n-hexane, ethyl acetate, and butanol which displayed 24.18%, 71.73% and 55.29% inhibition activity respectively. Gambir in ethyl acetate extract was further fractionated using open column (silica gel, 30 x 500 mm) using hexane and ethyl acetate gradient eluent, resulting into 2 fractions (UGE-A and UGE-B). Further fractionation using preparative TLC resulted in three spots.The spots were further analysed using LC-MS/MS.

Keywords: Diabetes, Alpha-glucosidase inhibitors, Antioxidant, Herbal, Gambir

DEDICATION

I dedicate this works to my wonderful parents, family, friends, without whom none of my success would be possible.

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Last but not least, I hope that this research will be useful to everyone who read this book. Comments, recommendations and criticism are really welcome.

Jakarta, June 22th, 2015

Chelsea Soedarma

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