

**DEVELOPMENT OF EYE DROPS FROM NATURAL EXTRACT
OF BUTTERFLY PEA PETAL EXTRACT AS THE ACTIVE
PHARMACEUTICAL INGREDIENT**

By

Jessica Putri

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Swiss German University
EduTown BSDCity
Tangerang 15339
INDONESIA

Telp. +62 21 3045 0045
Fax. +62 21 3045 0001
E-mail: info@sgu.ac.id
www.sgu.ac.id

Revision after the Thesis Defense on 25th July 2012

STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, 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.

Jessica Putri

Date

Approved by:

Hery Sutanto, SSi,MSi Advisor

Date

Irvan S. Kartawiria, ST,MSc, Co-Advisor

Date

Chairman of the Examination Steering Committee

Date

Jessica Putri

ABSTRACT

DEVELOPMENT OF EYE DROPS FROM NATURAL EXTRACT OF BUTTERFLY PEA PETAL EXTRACT AS THE ACTIVE PHARMACEUTICAL INGREDIENT

By

Jessica Putri

SWISS GERMAN UNIVERISTY

Bumi Serpong Damai

Hery Sutanto, SSi,MSi Advisor

Irvan S. Kartawiria, ST, MSc, Co-Advisor

Empirically the blue water extract from butterfly pea petal has been used as a traditional eye drops to relieve eye irritations such as eye redness and dry eyes. The purpose of this research was to develop the butterfly pea petal extract as the active ingredients for eye drops product. The sterility, stability, and compatibility of the extract as the active ingredients for eye drops product were examined. The sterility of the extract was achieved by doing two techniques; autoclaving the extract and by pasteurization. The stability of the extract was examined during 14 days storage period. The compatibility was examined by adding the extract to eye drops excipients, such as commercial eye drops solution, NaCl + Na₂EDTA solution, and NaCl solution. Autoclaving at 121°C for 15 minutes and pasteurization at 80-90°C for 30 minutes were effective to sterilize the extract and were able to preserve the bioactive compound that act as the antimicrobial. The butterfly pea petal was compatible with NaCl solution. The MIC for *Escherichia coli* and *Staphylococcus aureus* were 75µl/ml and 130µl/ml, respectively.

Keywords: *Clitoria ternatea L*, eye drops, minimum inhibitory concentration (MIC)

DEDICATION

For beloved people in my life; my mom and my dad, Jonathan Hartono and
Benedictus Setio. For the next big step in my life.



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This thesis is the best effort of the author, however there is always room for improvement.

BSD city, July 2012

Jessica Putri

SWISS GERMAN UNIVERSITY

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