THE EEFECT OF *Thymus vulgaris* EXTRACT ON SERUM, IL-12 AND BACTERIAL COLONIES IN LIVER OF MICE INFECTED BY *SalmonellaTyphimurium*

THESIS
To Fulfill the Requirements for Master Degree

by
EMAD KHALLEEFAH SAID ABOUSOUH
156070100011003

STUDY PROGRAM OF BIOMEDICAL SCIENCES
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Has been approved

Board of Supervisors

Supervisor I	**Supervisor II**
Prof.Dr.dr. Edi Widjajanto,MS,SpPK.(K)	dr. Hidayat Sujuti PhD., SpM

Board of Examiners

Examiner I	**Examiner II**
Dr. dr. Nurdiana, M.kes	Dr. dr. Dwi.Yuni Nur hidayati,MKes

Malang, 20 September 2017
University of Brawijaya
Dean of Faculty of Medicine

Dr. dr.Sri Andarini, M.Kes
NIP. 195804141987012001

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Student

Name : Emad Khalleefah Said Abousouh
SIN : 156070100011003
SP : Biomedical Science
Prog. : Postgraduate
Faculty: Medicine UB

THESIS TITLE:

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Name	: Emad Khalleefah Said Abousouh
Identity Number	: 156070100011003
Study Program	: Biomedical Science
Interest	: Immunology

SUPERVISOR COMMITTEE:

Supervisor I	: Prof.Dr.dr. Edi Widjajanto,MS,SpPK.(K)
Supervisor II	: dr. Hidayat Sujuti PhD., SpM

EXAMINER COMMITTEE:

Examiner I	: Dr. dr. Nurdiana, M.kes
Examiner I	: Dr. dr. Dwi.Yuni Nur hidayati,MKes

:

DEDICATION

This thesis is dedicated to my family,
my beloved Father and Mother,
Brothers and Sisters

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Bismiallah walhamdulilah, Praise to Almighty Allah SWT, for the blessing that enables the writer to have enough courage and patience to complete this Thesis entitled:

“EFFECT OF *Thymus vulgaris* ***EXTRACT ON SERUM ,IL12 AND BACTERIAL COLONIES IN the LIVER IN MICE INFECTED BY*** *SalmonellaTyphimurium"*

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The writer realizes that this writing is far from perfection; therefore, any suggestion and constructive criticism are welcome. Finally, may this thesis be of use for those who need it.

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The writer

ABSTRACT

The *Thymus vulgaris* extracts are effective as antibacterial and immunomodulating agents. Thymol becomes the primary monoterpene phenol which is isomeric with carvacrol and exists in thyme extract. The carvacrol activity is explored in microorganisms which are drug-resistant. Particularly, the strains are significantly pathogenic and difficult to cure up to currently. The intracellular infection of *Salmonella* stimulates macrophage to produce interleukin IL12 which plays role to stimulate naïve CD4 T cells to differentiate Th1 cells for enhancement of IFN-γ secretion. lFN γ plays important role for activate macrophage as it destroys the phagocytized bacteria. This study aimed to prove the *Thymus vulgaris* extract increasing IL12 and decreasing bacterial colonies in liver of mice infected with. *S.Typhimurium*. *Thymus vulgaris* extracted by maceration 3 times of the all plant (leaves, flowers and branches) which was bought from Nalut-Libya then evaporation of ethanol. The extraction results are stored in freezer. This study used 20 male mice infected Transurethraly by *S.Typhimurium* and divided into 5 groups, including positive control (infected with *S.Typhimurium*), negative control (without infection) and treatment groups D1,D2,D3 (mice administrated with extract of Thymus vulgaris (ECV)250,500,750mg/kgB.wt and with infection) and analyzed by measuring the bacterial colonies in liver, blood levels of IL-12 by ELISA method. **Results**. Results showed that *Thymus vulgaris* extract increase serum level IL12, D1,D2 and D3 without infection and decreases in withaPvalue0,000. In same results showed decreases bacterial colonies in liver D1,D2 and D3 with positive control (infected with *S.Typhimurium*), **Conclusion**. *Thymus vulgaris* extract improve immune response through the increases serum IL-12 and decreases bacterial colonies in liver in *mice infected with S. Typhimurium*.

Key words: *Thymus vulgaris,* IL-12, *S.Typhimurium*, in vivo