

**THE ROLE OF MESENCHYMAL STEM CELLS TO
REGULATE TH1 AND TH17 CELLS IN SYSTEMIC
LUPUS ERYTHEMATOSUS**

**(*In vitro* Study of Transwell-cultured Peripheral Blood
Mononuclear Cells and Mesenchymal Stem Cells)**

THESIS

Submitted as Partial Fulfillment of the Requirements for the
Post degree of Master Biomedical



By :

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**MEDICAL FACULTY
SULTAN AGUNG ISLAMIC UNIVERSITY
SEMARANG
2021**

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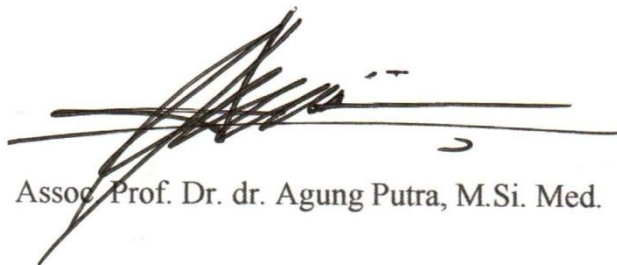
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It was defended before the Board of Examiners
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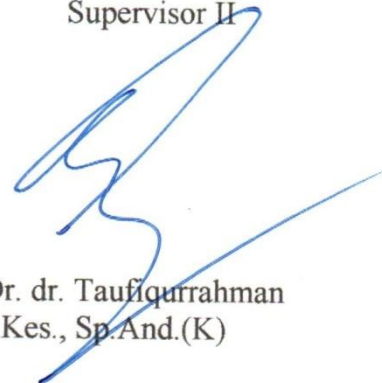
Approved by:

Supervisor I



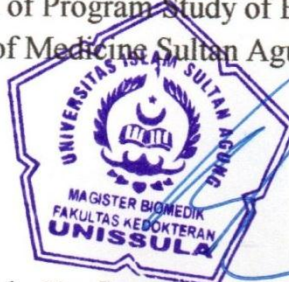
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Semarang, February 22, 2021
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STATEMENT LETTER

I hereby declare that this thesis is the result of my own work and in it no work has ever been submitted for obtaining a master's degree at a college or other educational institution. Knowledge obtained from published or unpublished results, the source of which is described in the writing and bibliography.

Semarang, February 2021



Azizah Retno Kustiyah

CURICULLUM VITAE

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Mother : Almh. Hj. Sa'adah

2. Children's names : Amalina Noor Shabrina; Dwiki Abdullah Fikri; Muhammad Rafiuddin

PREFACE

Assalamu'alaikum Warohmatullah Wabarokaatuh

Praise be to the presence of Allah subhanahu wata'ala for His mercy, so the thesis with the title, "The Role of Mesenchymal Stem Cells to Regulate Th1 and Th17 Cells in Systemic Lupus Erythematosus" (*In vitro* Study of Transwell-cultured Peripheral Blood Mononuclear Cells and Mesenchymal Stem Cells) can be resolved.

This thesis is structured as one of the requirements for achieving a Master's degree in Science Biomedical Medicine at the Faculty of Medicine, Sultan Agung Islamic University, Semarang. Author would like to sincerely thank you for this opportunity to:

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9. All parties who cannot be named one by one who have provided assistance in the preparation of this thesis proposal, hopefully all the help will be rewarded God.

The author realizes that there are still many shortcomings in the preparation of this study. By therefore, any constructive suggestions will be welcomed openly. Hope the author may this research is useful for various parties. As a final word from the author, the author hope that this Scientific Paper can be useful for all of us.

Wassalamu'alaikum Warohmatullah Wabarokaatuh

Semarang, February 2021



Author