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Cairo University
Faculty of science
Chemistry Depart.

*Synthesis of New Heterocyclic Steroids as a Novel Class
of Potent Anti-Inflammatory, Anti-Nociceptive and
Anti-Ulcerogenic Agents*

Presented by

Marian George William Amin

A Thesis Submitted to
Faculty of Science

In Partial Fulfillment of the
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APPROVAL SHEET FOR SUMISSION

Thesis Title: **Synthesis of New Heterocyclic Steroids as a Novel
Class of Potent Anti-Inflammatory, Anti-
Nociceptive and Anti-Ulcerogenic Agents**

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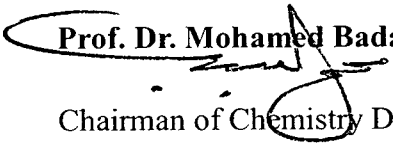
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Addendum

Beside the work carried out in this thesis, the candidate ***Marian George William Amin*** has attended Post-graduate courses during the academic year 2006-2007 in the following topics:

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- Heterocyclic Chemistry
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- German language
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ABSTRACT

Student Name: Marian Gorge William

Title of the thesis: Synthesis of New Heterocyclic Steroids as a Novel Class of Potent Anti-Inflammatory, Anti-Nociceptive and Anti-Ulcerogenic Agents

Degree: M. Sc. Specialist: Organic Chemistry

The identification of compounds able to treat both pain and inflammation with limited side effects is one of the prominent goals in biomedical research. This study aimed at the synthesis of new steroidal heterocyclic derivatives with structures justifying anti-inflammatory and anti-nociceptive activities. The steroidal heterocyclic derivatives were synthesized via straightforward and efficient methods and their structures were established based on the analytical and spectral data. The *in vivo* anti-inflammatory, anti-nociceptive and anti-ulcerogenic activities of some of these compounds were studied. The novel synthesized derivatives **8b**, **19b**, **24**, **31a**, **37**, and **41a** showed anti-inflammatory, antinociception and anti-ulcerogenic activity with various intensities. Oedema was significantly reduced by both doses (25 and 50 mg/kg) of all tested compounds at 3 and 4h post-carrageenan. Compounds **19b**, **37** and **46a** were most effective in alleviating thermal pain. The analgesic activity of either dose of the compounds **8b**, **24**, **31a** as well as the high dose **19b** was significantly higher than indomethacin (IND). Gastric mucosal lesions caused in the rat by the administration of 96% EtOH and IND were inhibited by all tested compounds administered at (50 mg/kg) dose in the study.

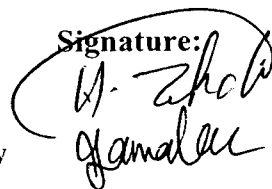
Keywords: Steroids, Azoles, Oxarine, Pyrrole. Anti-inflammatory, Anti-nociceptive, Anti-ulcerogenic

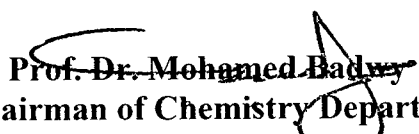
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List of Contents

Title	Page
1. SUMMARY	1
2. AIM OF THE WORK.....	1
3. LITERATURE REVIEW	2
3.1. Introduction	2
3.2. Steroidal Heterocyclic Compound.....	4
3.3. Glucocorticoid Therapy.....	4
3.4. Anti-inflammatory Steroidal Heterocyclic Drugs.....	6
3.5. Antedugs.....	11
3.6. Synthesis of Anti-inflammatory Steroid Derivatives.....	12
3.6.1. Carboxylic Esters and Amides.....	12
3.6.2. Steroidal Heterocyclic Antedugs.....	18
3.7. Pharmacology of Anti-inflammatory Steroid Derivatives.....	24
3.7.1. Ring –Fused Isoxazolines and Oxime Derivatives.....	31
3.7.2. Spiro Enone Derivatives.....	32
3.7.3. γ -Butyrolactone Derivatives.....	32

3.7.4. Antedrgs in Clinical Use	34
3.7.5. The Prodrug and Pro-Antedrgs.....	35
3.8. Antinociceptive Steroid Drugs.....	36
4. RESULTS AND DISCUSSION.....	42
4.1. Chemistry	42
4.2. Pharmacology.....	52
4.2.1. Anti-inflammatory Assay.....	52
4.2.1.1. Effect of compounds 8b and 24	52
4.2.1.2. Effect of compounds 19b and 31a	53
4.2.1.3. Effect of compounds 37 and 41a	53
4.2.2. Testes of Antinociceptive Studies.....	53
4.2.2.1. Effect of tested compounds on thermal pain.....	53
4.2.2.2. Effect of tested compounds on acetic acid-induced writhing.....	54
4.2.3. Testes of Gastric Ulcerogenic Studies.....	54
4.2.3.1. Effect of tested compounds on gastric lesions caused by ethanol	55
4.2.3.2. Effect of tested compounds on gastric lesions caused by indomethacin.....	55
4.3. Conclusion.....	56

5. MATERIALS AND METHODS.....	69
5.1. Synthetic Methods, Analytical and Spectral Data.....	69
5.1.1. Synthesis of 17-(oxiran-2'-yl)androst-4-ene-3-one derivatives (3, 15 and 24).....	70
5.1.2. Synthesis of 17-(3'-arylamino-butanyl)androst-4-ene-3-one derivatives (5a-c), (16a-c), and (25a-c).....	71
5.1.3. Synthesis of 17-(pyrazol-5'-yl)androst-4-ene-3-one derivatives (8a,b), (9a,b), (10a,b), (18a,b), (19a,b), (20a,b), (27a,b), (28a,b) and (29a,b).....	76
5.1.4. Synthesis of 20-(imidazole-3-yl)pregn-4-ene-3-one derivatives (13a-c), (22a-c), (31a-c).....	84
5.1.5. Synthesis of 20-hydrazonopregn-4-en-3-on (32).....	89
5.1.6. Synthesis of hydrazono N-phenylmethanethioamide-pregn-4- en-3-one (33).....	89
5.1.7. Synthesis of 20-thiazolylhydrazonopregn-4-ene-3-one derivatives (35, 36 and 37).....	90
5.1.8. Synthesis of 20-(2'-oxo-2'-phenylethylhydrazono)pregn-4- ene-3-one (38).....	92
5.1.9. Synthesis of pyrolyl progesterone derivatives (41a,b).....	92
5.2. Pharmacological Assay	94
5.2.1. Animals.....	94
5.2.2. Testes of Inflammation: Carrageenan-Induced Paw Oedema Assay.....	94
5.2.3. Testes of Nociception.....	95
5.2.3.1. Hot plate assay.....	95

List of Content

5.2.3.2. Acetic acid induced writhing.....	95
5.2.4. Gastric Ulcerogenic Study.....	96
5.3. Statistical Analysis.....	96
6. REFERENCES.....	97
7. ARABIC SUMMARY.....	I