

بسم الله الرحمن الرحيم



-C-02-50-2-





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرونيلم





جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة يعيدا عن الغيار







بالرسالة صفحات لم ترد بالأصل









A Pharmacognostical Study of *Cassia*glauca (Lam.) (Senna surattensis (Burm. f.)) Family Fabaceae

BILLANO

A thesis presented by

Elham Amine Mohamed

For the Degree of Master in Pharmaceutical Sciences (Pharmacognosy)

Under the supervision of

Professor Dr. Ali M. El-Shamy

Professor of Pharmacognosy Faculty of Pharmacy Cairo University

Professor Dr. Seham S. El-Hawary

Professor of Pharmacognosy Faculty of Pharmacy Cairo University Professor Dr. Essam Abdel

Sattar

Professor of Pharmacognosy Faculty of Pharmacy Cairo University

Pharmacognosy Department
Faculty of Pharmacy
Cairo University

2006

بسم الله الرحمن الرحيم قالوا سيمانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم صدق الله العظيم البقرة (٣٢)

AND MANANTANA MA

APPROVAL SHEET

A Pharmacognostical Study Of Cassia glauca Lam. [Senna surattensis (Burm. f.) Family Fabaceae

Approved by:

San Aboleh wohils

Hamaa M. Saged Thamy Scham El Hawary

Date: 13-11-2006.

Acknowledgement

Praise is to Allah, the most gracious and the source of all knowledge by whose abundant grace this work has come to completion.

Neither words nor the available space can describe my greatest appreciation, sincere thanks and gratitude to all the members of the kind and helpful team, I have got the honor to work with.

My deepest thanks and sincere gratitude were owed to Prof. Dr. Ali M. El-Shamy. Prof. Of Pharmacognosy, Faculty of Pharmacy, Cairo university for supporting the work in this thesis, his continuous, valuable supervision and constructive comments through the experimental investigations as well as writing and revising the thesis.

I am profoundly grateful to Prof. Dr. Seham S. El-Hawary, Prof. Of Pharmacognosy, Faculty of pharmacy, Cairo University for her conscientious and fruitful supervision, unlimited advice and continuous quidance during the development of this work.

My great thanks to Prof. Dr.Essam A. Abdel-Sattar, Prof. Of Pharmacognosy, Faculty of pharmacy, Cairo University for pushing me forward by his supervision, continuous encouragement, support, kind relation and assistance.

I wish to express my deepest appreciation to Dr.Sayyed M. El-Sayyed, Dr.Osamaa Abu-Salem, Pharmacology Department, Faculty of Pharmacy, Al-Azhar University and Dr. Yasser Gaber, Microbiology Department, Faculty of pharmacy, Beni-suef University for their kind and unlimited help in carrying out the biological study of this thesis.

Also my thanks to Dr. Mohamed E. Radi, Zoology Department, Faculty of Science, Al-Azhar University, for interpretation of histopathology.

I am grateful to all members of pharmacognosy departments, Faculties of pharmacy, Cairo and Beni-suef Universities who gave me the benefit of their experience and encouragement, especially Dr. Enas Hussein, Dr. Khaled M. Ibrahim, Dr.Sameh F. Abu Zeid and Dr.Rhabab M. Abdel Salam for their kind, unlimited help, encouragement and moral support during the work of this thesis.

I am profoundly grateful to my dear and beloved father and mother to whom words are not enough to describe their care, tenderness and support. I would like to extend my heartfelt gratitude to my husband for his continuous support and help during all the work especially in the pharmacological study, so my deep appreciation is devoted to him.

Elham Amin Mohammed

Contents

Subject	Page
INTRODUCTION	1
REVIEW OF LITERATURE	4
TAXONOMY	53
MATERIAL, APPARATUS AND TECHNIQUE	56
PART I: BOTANICAL STUDY OF CASSIA	
GLAUCA LAM	
Chapter I: Macromorphology of Cassia glauca Lam.	
1-The stem	70
2-The leaf	72
3-The flower	72
4-The fruit	76
Chapter II: Micromorphology of Cassia glauca Lam.	
1-The stem	78
2-The leaf	85
3-The flower	93
4-The fruit	104
PART II: PHYTOCHEMICAL INVESTIGATION	
OF CASSIA GLAUCA LAM.	
Chapter I:	
Preliminary phytochemical screening	114

•Qualitative study of anthraquinone content of the different	
plant organs containing anthraquinones	117
•Quantitative study of anthraquinone content of the different	
plant organs containing anthraquinones and certain market	
herbal formulations containing anthraquinone derivatives.	141
Chapter II: Investigation of flavonoidal content of the leaves	
of Cassia glauca Lam.	
•Extraction and isolation	167
•Results and discussion	177
Chapter III: Investigation of the lipid content of the seeds	
and flowers of Cassia glauca Lam.	
•GLC analysis	192
•Column chromatography	198
content of the seeds of Cassia glauca Lam	215
Chapter V: Investigation of the tannin content of the leaves	2,0
and bark of Cassia glauca Lam	220
PART III: BIOLOGICAL STUDY OF CASSIA	
GLAUCA LAM.	
Chapter I: Pharmacological screening	
A-In vivo biological study	
General behavior and acute toxicity	222
Antidiabetic effect	223
Antioxidant effect	228
B- In vitro biological study	

• Effect on the contractility of isolated rabbit jejunum	249
• Determination of the site of action	251
Chapter II: Antimicrobial screening	253
GENERAL SUMMARY	257
REFERENCES	278
ARABIC SUMMARY	١

List of Tables

No.	Table	Page
1	Distribution of the active constituents in the different	
	organs in some Cassia species cultivated in Egypt	30
2	Microscopical measurements of the different organs of	
	Cassia glauca Lam. (in microns)	112
3	Results of phytochemical screening of the different	
	organs of Cassia glauca Lam	116
4	Results of TLC screening of the petroleum ether extracts	
	of the seed, the bark and the root of the plant	119
5	Results of TLC screening of the chloroform extracts of	
	the seed, the bark and the root of the plant	120
6	¹ H-NMR spectral data of compounds C ₁ -C ₄	128
7	Different concentrations of standard emodin and their	
	respective absorbance at λ_{max} 520	145
8	Results of spectrophotometric determination of	
	anthraquinone content in different organs of the plant	146
9	Different concentrations of standard emodin and their	
	respective area under peaks (AUPs)	148
10	Results of HPLC determination of individual	
	anthraquinones in the different plant organs	150
11	Results of TLC examination of anthraquinones in some	
	market preparations against available authentics	154
12	Different concentrations of rhein and their respective	
	absorbance at λ_{max} 520	156