

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

A THESIS ENTITLED

SPECTROPHOTOMETRIC DETERMINATION OF THE

DRUG SILDENAFIL CITRATE USING CHROMOTROPIC

ACID AZO DYES

PRESENTED BY

ASMAA RAGB SENOSY KHALID

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**“SPECTROPHOTOMETRIC DETERMINATION OF THE
DRUG SILDENAFIL CITRATE USING CHROMOTROPIC
ACID AZO DYES”**

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ABSTRACT

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Title of Thesis: Spectrophotometric Determination of the Drug Sildenafil Citrate Using Chromotropic Acid Azo Dyes.

Degree: Master of Science (M. Sc).

Simple and highly sensitive spectrophotometric methods have been developed for the quantitative determination of sildenafil citrate (SC), Viagra, in pure form and in pharmaceutical formulations, through ion-associate formation reactions with mono-chromotropic acid azo dyes, chromotrope 2B (I) and chromotrope 2R (II) and ion-pair reactions with bi-chromotropic acid azo dyes, 3-phenylazo-6-o-carboxyphenylazo-chromotropic acid (III), bis-3,6-(o-hydroxyphenylazo)-chromotropic acid (IV), bis-3,6-(p-N,N-dimethylphenylazo)-chromotropic acid (V) and 3-phenylazo-6-o-hydroxyphenylazo-chromotropic acid (VI). The reaction conditions were studied and optimized. The methods were successfully applied to the analysis of commercial tablets (Vigoran) and the recovery study reveals that there is no interference from the common excipients that are present in tablets. Statistical comparison of the results was performed with regard to accuracy and precision using student's t- and F-tests at 95% confidence level. Solid complexes of SC were prepared, and then subjected to elemental analysis, IR and UV/Vis measurements to elucidate the structure of these complexes.

Key words: Spectrophotometry, Sildenafil citrate, Chromotropic acid azo dyes, Ion-pair, Ion-associate.

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Publications

Part of the original work of this thesis has been published in a paper

1- Spectrophotometric determination of sildenafil citrate in pure form and in pharmaceutical formulation using some chromotropic acid azo dyes.

Y.M. Issa, W.F. El-Hawary, A.F.A. Youssef, A.R. Senosy, Spectrochimica Acta Part A, 75, 1297 (2010).

Also another part of the work in this thesis is under publication.

CONTENTS

	Pages
List of Tables.....	
List of Figures.....	
Abbreviations.....	
Statement and Objectives of the Work.....	
CHAPTER I: INTRODUCTION	
I.1. Pharmaceutical Analysis.....	1
I.2. Sources of Information in Pharmaceutical Analysis.....	1
I.3. Specialized Analytical Methods and Equipments.....	1
I.4. Spectrophotometric Methods Used for Pharmaceutica Analysis.....	4
I.4.1. Visible Absorption (colorimetry) Assays.....	4
I.4.2. Spectrophotometric Assay in the Ultraviolet Region.....	5
CHAPTER II: LITERATURE SURVEY	
II.1. Literature Survey on the Methods of Determination of Sildenafil Citrae	8
II.1.1 Spectrophotometric Methods.....	8
II.1.2. Electroanalytical Methods.....	10
II.1.3. Chromatographic Methods.....	14
II.1.4. Miscellaneous Methods.....	22
II.2. Spectrophotometric Determination of some Pharmaceutica Compounds Using Chromotrop Acid Azo Dyes.....	25
II.3. Spectrophotometric Determination of some Pharmaceutical Compoundsthrough Ion-Pair Complexation Reactions.....	31
CHAPTER III: EXPERIMENTAL	
III.1. Materials and Reagents.....	36

III.2. Solutions.....	37
III.2.1. Sildenafil Citrate Solution.....	37
III.2.2. Chromotropic Acid Azo Dyes Solutions.....	37
III.2.3. Acidic Solutions.....	37
III.2.4. Clark and Lubs Buffer Solutions.....	37
III.2.5. Preparation of Vigoran Solution (Sildenafil Citrate).....	37
III.3. Apparatus.....	38
III.4. General Procedures for Determination of Sildenafil Citrate....	38
III.4.1. Mono-Azo Dyes of Chromotropic Acid (I and II).....	38
III.4.2. Bi-Azo Dyes of Chromotropic Acid (III-VI).....	38
III.5. Optimum Conditions for the Ion-associates Formation.....	39
III.5.1. Effect of Acidity.....	39
III.5.2. Effect of the Reagent Concentration.....	39
III.5.3. Effect of the Extracting Solvents.....	40
III.5.4. Effect of Sequence of Mixing.....	40
III.5.5. Selection of the Suitable Wavelength.....	40
III.5.6. Effect of Time and Temperature.....	40
III.5.7. Influence of the Foreign Ions.....	41
III.6. Molecular Structure of the Ion-Associates.....	41
III.7. Spectral Characteristics of the Ion-Associates Complexes.....	41
III.8. Obedience to Beer's Law.....	42
III.9. Analytical Applications.....	43
III.10. Standard Addition Method.....	43
III.11. Preparation of Solid Complexes.....	43
III.12. Evaluation of Association Constant and Free Energy Change.....	44

CHAPTER IV: RESULTS AND DISCUSSION

IV.1. Spectrophotometric Determination of Sildenafil Citrate Using Chromotropic Acid Mono- and Bi-Azo Dyes	47
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IV.1.1. Selection of the Maximum Wavelength.....	47
IV.1.2. Effect of the Extracting Solvent.....	49
IV.1.3. Effect of Acidity.....	51
IV.1.4. Optimization of the Extraction Conditions.....	52
IV.1.5. Effect of the Reagent Concentration.....	53
IV. 1.6. Sequence of Mixing.....	53
IV.1.7. Effect of Time and Temperature.....	54
IV.1.8. Stoichiometry of the Complex.....	56
IV.1.9. Effect of Surfactant.....	57
IV.1.10. Analytical Parameters.....	57
IV.1.11. Reproducibility.....	62
IV.1.12. Influence of Foreign Ions.....	64
IV.1.13. Application to Pharmaceutical Preparations.....	65
IV.1.14. Spectral Characteristics of the Ion-Associate Complex.....	67
IV.1.15. Evaluation of Apparent Formation Constant of the Proposed Sildenafil Citrate Complexes from Spectrophotometric Measurements.....	69
IV.1.16. Determination of Association Constant and Free Energy Change.....	71
IV.2. Spectral Studies on the Investigated SC Solid Complexes.....	73
IV.2.1. Microanalysis of SC Solid Complexes.....	73
IV.2.2. Visible Spectra Complexes of SC Solid	73
IV.2.3. Infrared Spectra of SC Complexes.....	76
IV.2.3a. OH Bands.....	76
IV.2.3b. Absorption in the 1700–1400 cm ⁻¹ Region.....	77
IV.2.3c. Absorption in the 1400–600 cm ⁻¹ Region.....	77
IV.3. Inter Comparison with the Previously Reported Spectrophotometric Methods.....	81
IV.4. Conclusion.....	81

Summary..... 83

References..... 85

Arabic Summary..... 97

LIST of TABLES

		Page
Table 1	Analytical parameters for determination of sildenafil citrate using chromotropic acid mono- and bi-azo dyes.	60
Table 2	Evaluation of precision of the proposed methods on pure samples of sildenafil citrate using reagents I-VI.	63
Table 3	Inter-day and intra-day precision of sildenafil citrate in pure form using chromotropic acid mono-and bi-azo dyes.	64
Table 4	Effect of common excipients of the tablet on the absorbance of ion-associates using reagents I-VI.	65
Table 5	Determination of sildenafil citrate in pharmaceutical forms (Vigoran tablet) using reagents I-VI.	66
Table 6	Determination of sildenafil citrate in pharmaceutical preparation, applying the standard addition technique using reagents I-VI.	68
Table 7	The spectral properties of ion-associate complexes formed between sildenafil citrate with reagents I-VI,	69
Table 8	The association (K_c) and formation (K_f) constants and the calculated free energy for SC ion-pair and ion-associate complexes with chromotropic acid. mono- and bi-azo dyes	70

Table 9	Data of elemental analysis of some investigated SC complexes.	74
Table 10	Absorption data of some chromotropic acid azo dyes and their complexes with sildenafil citrate.	76
Table 11	Assignment of IR bands of SC and its complexes with chromotropic acid azo dyes.	78
Table 12	Comparison of the proposed methods with the existing spectrophotometric methods for the determination of sildenafil citrate.	82

LIST of FIGURES

		Page
Fig. 1	Ultraviolet spectrum of sildenafil citrate solution (4.2×10^{-5} M) in 30% v/v methanol-water.	8
Fig. 2	Structure of sildenafil citrate with atom numbering.	24
Fig. 3	Absorption spectra of reagents I and II in aqueous media and their resulting complexes with SC.	47
Fig. 4	Absorption spectra of reagents III-VI in aqueous media and their resulting complexes with SC.	48
Fig. 5	Effect of extraction solvent on the absorption spectra of SC-I [A] and SC-II [B] ion-associates.	49
Fig. 6	Effect of extraction solvent on the absorption spectra of SC-III [C] and SC-IV [D] ion-pairs.	50
Fig. 7	Effect of extraction solvent on the absorption spectra of SC-V [E] and SC-VI [F] ion-pairs.	51
Fig. 8	Influence of the pH values on the absorbance of SC complexes with reagents I-VI.	52
Fig. 9	Effect of reagent concentration (0.005 M) on the absorbance of SC-(I-VI) complexes in methylene chloride.	54
Fig. 10	Effect of time on the formation of SC-(I-VI) complexes.	55
Fig. 11	Effect of temperature on the stability of SC ion-	56

associate with reagents I–VI.

Fig. 12	Job's method of SC ion-associate in methylene chloride using reagents I–VI.	57
Fig. 13	Beer's law plots for SC determination using reagents I and II.	58
Fig. 14	Beer's law plots for SC determination using reagents III–VI.	59
Fig. 15	Ringbom plots of SC ion-associate with reagents I and II.	61
Fig. 16	Ringbom plots of SC ion-pairs with reagents III–VI.	62
Fig. 17	Benesi-Hildebrand plots for SC ion-pair with bi-azo chromotropic acid reagents (III–VI).	72
Fig. 18	Absorption spectra of the reagents I and II and their complexes with SC in DMF.	75
Fig. 19	Absorption spectra of the reagents IV–VI and their complexes with SC in DMF.	75
Fig. 20	IR-spectra of the drug sildenafil citrate and reagents I and II and their complexes with sildenafil citrate (SC-I-SC-II).	79
Fig. 21	IR-spectra of reagents III–V and their complexes with sildenafil citrate.	80