

## ***Dedication***

*I dedicate this work to*

*My beloved parents,*

*Brothers, sister*

*And friends.*

## ***Abstract***

Methyl salicylate was prepared by acid esterification of salicylic acid in methanol.

Hydroxylamine hydrochloride was freed by neutralization with equi-molar amount of sodium hydroxide.

Salicylhydroxamic acid was synthesized by coupling the prepared methylsalicylate with free hydroxylamine. The compound was identified and characterized by m.p. and IR spectroscopy.

Iron, copper and vanadium complexes of salicylhydroxamic acid were prepared and showed their characteristic colors.

UV-Vis spectrophotometric analysis of these complexes shows a linear relationship between the absorbance and complex concentration for these metal ions.

Stoichiometry was investigated for the ligand with iron, copper, and vanadium at different pH's to be found as 1:1, 1:2, and 1:3 for iron, 1:2, and 1:3 for vanadium and 1:1 only for copper.

This may lead to the investigation of using salicylhydroxamic acid as chromogenic reagent for analytical spectrophotometric determination of copper and vanadium.

## **الخلاصة**

تم تحضير سالسيلات الميثيل عبر الأسترة الحمضية لحمض السالسيليك في ميثانول.

تم تحرير هيدروكسيل أمين الطليق بمعالجة هيدروكلوريد هيدروكسيل أمين بإضافة كمية مكافئة من محلول هيدروكسيد صوديوم.

تم تركيب حمض سالسيل هيدروكس咪ك بخلط هيدروكسيل امين الحر مع إستر سالسيلات ميثيل.  
وتم التعرف والتحقق من الحمض بقياس نقطة الانسحار وطيف الأشعة تحت الحمراء.

وحضرت معقدات حمض سالسيل هيدروكس咪ك مع الحديد، النحاس والفانيديوم وأظهرت  
المعقدات الألوان المميزة.

أظهرت تحاليل الطيف فوق البنفسجي والمرئي علاقة خطية بين الامتصاص وتراكيز المعقدات.

تبين من قياسات العلاقة الكمية الحسابية للنسبة التي تتكون بها المعقدات بين اللاقط وأيون المعدن عند مختلف قيم الأس الهيدروجيني، أن الحديد يظهر العلاقات 1:1، 1:2 و 1:3 ، بينما يظهر الفانيديوم 1:2 و 1:3 أما النحاس فيظهر فقط العلاقة 1:1

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# ***Contents***

Content.....	Page
Dedication.....	(i)
Abstract (English).....	(ii)
Abstract (Arabic).....	(iii)
Acknowledgements.....	(iv)
Lists of content.....	(v)
List of tables.....	(x)
List of figures.....	(xi)

## ***Chapter one***

# ***Introduction***

1.1	Organic reagents in analytical chemistry.....	1
1.2	Chemistry of hydroxamic acid .....	3
1.2.1	Structure and bonding.....	3
1.2.2	Synthesis of Hydroxamic acid .....	7
1.2.3	Nomenclature of hydroxamic acids.....	9
1.2.4	Detection of hydroxamic acids .....	10
1.2.5	Properties of hydroxamic acid .....	10
1.2.6	Reactions of hydroxamic acids .....	11
1.2.6.1	Hydrolysis.....	11
1.2.6.2	Nucleophilic reactions.....	11
1.2.6.3	Lossen rearrangement.....	12
1.2.6.4	Oxidation and reduction.....	13
1.2.7	Industrial uses and biological activity .....	14
1.3	Salicylic acid (parent acid).....	16
1.4	Salicylhydroxamic acid .....	17
1.5	Thiohydroxamic acid.....	18
1.6	Analytical applications of hydroxamic acids.....	19

1.6.1 Qualitative organic analysis.....	19
1.6.2 Gravimetric methods.....	20
1.6.3 Colorimetric applications.....	20
1.6.4 Titrimetric and paper Chromatographic applications.....	21
1.6.5 Hydroxamic acid chelating exchange resins.....	23
1.7 Hydroxamic acid complexes.....	23
1.8 Factors influencing the formation and stability of complexes.....	25
1.8.1 The metal ion.....	26
1.8.2 The ligand.....	27
1.9 Spectral elucidation of complexes .....	28
1.10 Methods of stoichiometric determination .....	30
1.10.1 Mole ratio method .....	30
1.10.2 Slope ratio method.....	30
1.10.3 Continuous variation method.....	30
1.11 Objective of the research project.....	32

*Chapter two*

***Experimental and results***

2.1 Instruments used.....	33
2.2 Reagents.....	33
2.3 Preparation of salicylhydroxamic acid (SHA) .....	34
2.3.1 Preparation of methyl salicylate.....	34
2.3.2 Preparation of salicylhydroxamic acid.....	35
2.4Qualitative evaluation of salicylhydroxamate complexes.....	37
2.4.1 Iron Salicylhydroxamate complex.....	37
2.4.2 Vanadium Salicylhydroxamate complex.....	37
2.4.3 Copper salicylhydroxamte complex.....	37
2.5 Quantitative Evaluation of complex formation .....	38
2.5.1 Preparation of stock solution of salicylhydroxamic acid.....	38
2.5.2 Preparation of stock solution for metal cations.....	38
2.5.3 Preparation of standard solution of complexes.....	38
2.5.4 Preparation of blank solution.....	38
2.5.5 $\lambda_{\max}$ determination.....	39
2.6 Determination of stoichiometry of complexes using continuous variation method.....	43
2.6.1 Preparation of buffer solutions.....	43
2.6.2 Determination of stoichiometry of iron salicylhydroxamate complex (pH=1.5).....	43

2.6.2.1 Preparation of ferric chloride stock solution (0.013M).....	43
2.6.2.2 Preparation of salicylhydroxamic acid stock solution (0.013M).....	43
2.6.2.3 Preparation of Iron salicylhydroxamate complex.....	44
2.6.2.4 $\lambda_{\max}$ determination.....	44
2.6.3 Determination of stoichiometry of vanadium salicylhydroxamate complex (at pH5).....	51
2.6.3.1 Preparation of ammonium-metavanadate stock solution.....	51
2.6.3.2 Preparation of salicylhydroxamic acid stock solution.....	51
2.6.3.3 Preparation of vanadium salicylhydroxamate complex.....	51
2.6.3.4 $\lambda_{\max}$ determination.....	51
2.6.4 Determination of stoichiometry of copper salicylhydroxamate complex (at pH5).....	56
2.6.4.1 Preparation of copper sulfate stock solution.....	56
2.6.4.2 Preparation of salicylhydroxamic acid stock solution.....	56
2.6.4.3 Preparation of copper salicylhydroxamate complex.....	56
2.6.4.4 $\lambda_{\max}$ determination.....	56

*Chapter three*

***Discussion and conclusion***

3. 1 Discussion and conclusion.....	63
3.2 suggestion for further work.....	65
3.3 References.....	66

## ***List of tables***

Table 1: Concentration of iron vs. absorbance .....	40
Table 2: Concentration of vanadium vs. absorbance.....	41
Table 3: Concentration of copper vs. absorbance .....	42
Table 4: Acid/iron concentration vs. absorbance (pH 1.5).....	45
Table 5: Acid/iron concentration vs. absorbance (pH 2.5).....	47
Table 6: Acid/iron concentration vs. absorbance (pH 3.5).....	49
Table 7: Acid/vanadium concentration vs. absorbance (pH 5).....	52
Table 8: Acid/vanadium concentration vs. absorbance (pH 6.5).....	54

Table 9: Acid/copper concentration vs. absorbance (pH 5).....	57
Table 10: Acid/copper concentration vs. absorbance (pH 6).....	59
Table 11: Acid/copper concentration vs. absorbance (pH 7).....	61

## *List of figures*

Fig 1: Calibration curve of iron salicylhydroxamate complex.....	40
Fig 2: Calibration curve of vanadium salicylhydroxamate complex.....	41
Fig 3: Calibration curve of copper salicylhydroxamate complex.....	42
Fig 4: Stoichiometric curve of iron complex (pH 1.5).....	46
Fig 5: Stoichiometric curve of iron complex (pH 2.5).....	48
Fig 6: Stoichiometric curve of iron complex (pH 3.5).....	50
Fig 7: Stoichiometric curve of vanadium complex (pH 5).....	53
Fig 8: Stoichiometric curve of vanadium complex (pH 6.5).....	55

Fig 9: Stoichiometric curve of copper complex (pH 5).....	58
Fig 10: Stoichiometric curve of copper complex (pH 6) .....	60
Fig 11: Stoichiometric curve of copper complex (pH 7).....	62