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صدق الله العظيم

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**Abstract**

Oxalohydroxamic and Benzohydroxamic acids were prepared, from oxalic and benzoic acids by the action of their corresponding methyl esters on free hydroxylamine.

The synthesized acids were used as chelating agents towards two different metal ions Fe(III) and Cu(II).

The free ligands were characterized by their melting points, molecular weight, the results were found to be in agreement with their theoretical values.

The free ligands and complexes of Fe(III),Cu(II), were studied spectroscopically, using IR techniques. The result obtained showed that most characteristic bands associated with hydroxamic acid functional group that is due to O - H , C = O , N - O and C - N .

## ملخص البحث

تم تحضير اثنان من الأحماض الهيدروكسيمييه بنزو هيدروكساميك و أوكسالو- هيدروكساميك من حمضى البنزويك و الاوكساليك وذلك بتحضير بنزوات الميثيل و أوكسلات الميثيل أولاً ثم تفاعل هذه الإسترات مع هيدروكسيل أمين الحر.

باستخدام هذه الأحماض تم تحضير معقدات مخلبية لكل مع ايونات معدنى الحديد (3+) و النحاس (2+).

كما تم التعرف على هذه الأحماض عن طريق تحديد الوزن الجزيئى للمركبات ( باستخدام طريقة المعايرة مع هيدروكسيد الصوديوم ) , و درجة الأنصهار , وقد وجدت جميعها مقاربة من القيم النظرية .

تمت دراسة أطيف كل المركبات التى تم تحضيرها باستخدام أطيف الأشعة تحت الحمراء . وكانت النتيجة المتحصل عليها متضمنة لمعظم الزمر

الوظيفية التي توجد في احماض الهيدروكساميك  
وهي  $O - H$  ,  $C = O$  ,  $N - O$  and  $C - N$  .

## **Acknowledgements**

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# **DEDICATION**

To my father,

Mother,

Brothers and Sisters

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## Abbreviations

cm	Centimeter ( $10^{-2}$ of a meter)
EDTA	Ethylene diamine tetra acetic acid
G	Gram
U.V	Ultra violet
IR	Infrared
N.M.R	Nuclear Magnetic Resonance
m.p	Melting point
Conc	Concentration
Fig	Figure

No	Number
Lit	Literature
A	Appendix
°c	Degrees centigrade
OHA	Oxalo Hydroxamic Acid
BHA	Benzo Hydroxamic Acid