

(Chromatographic-Biochemical)-Studying of (Five, Six ,Seven)-Cycles

Dr. Nagham Mahmood Aljamali^{1*}, Dr. Saher Mahmood Jawd²

¹Department of Chemistry, Faculty of Education for Girls ,Kufa University, Iraq.

²Department of Biology, Faculty of Education for Girls ,Kufa University, Iraq.

*Corresponding Author E-mail: Dr.Nagham_mj@yahoo.com

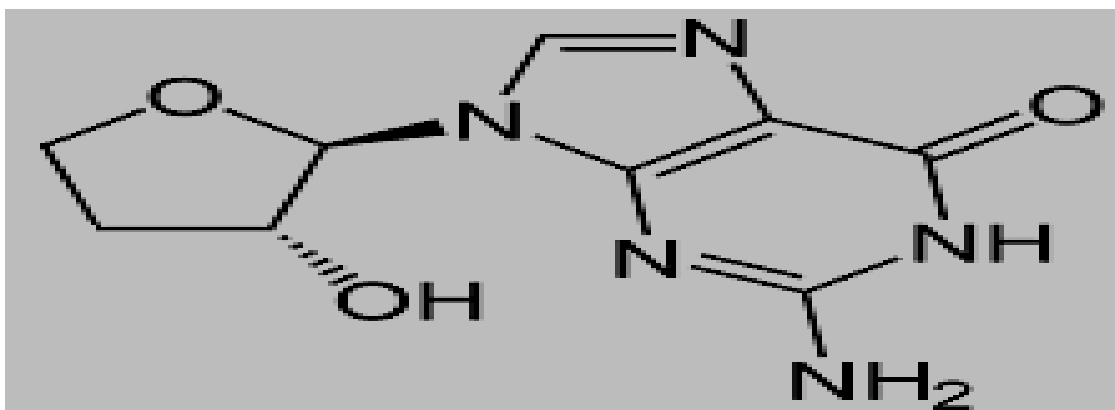
ABSTRACT

All cyclic compounds an important parts from bio-systems as hemoglobin , vitamins , DNA and as a drugs in medical , pharmaceutical treatments, for this ,our work involved some studies like chromatographic , microbial ,other bio-chemical studies for our previously prepared compounds in previously papers to apply them as antimicrobial compounds at selected concentrations in our studying. Formatted cycles screened with many types of microbes.

Keywords: antimicrobial , sulfo , agar .

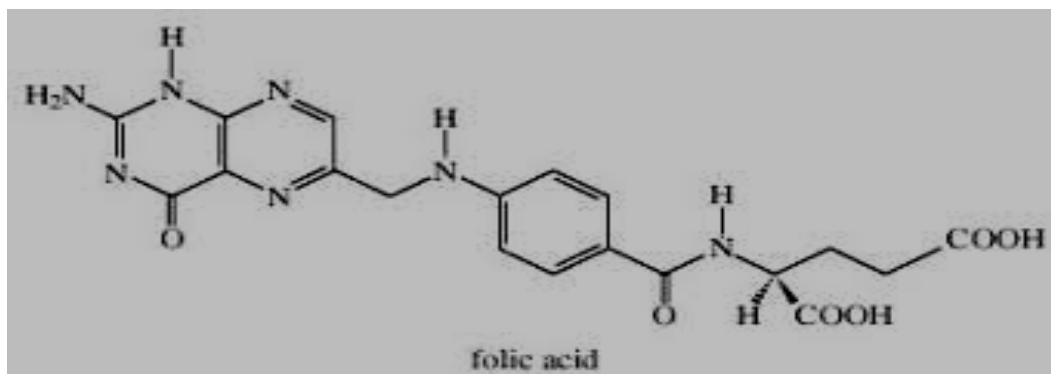
I.INTRODUCTION

The first purpose of Heterocyclic synthesis at the present time and future for discovery and understanding, and behavior of microbial activity. Pharmaceutical laboratories, research foundations, and academic institutions throughout the world are engaged in this work⁽¹⁻⁴⁾. Several cyclic compounds are prepared to discover useful biological activity, and when activity is discovered, related compounds are prepared⁽⁵⁻¹⁵⁾ to indicate it. Syntheses suitable for production of drug candidate molecules are developed. The ultimate goal is to apply this knowledge about microbial activity for treatment and prevention of disease.



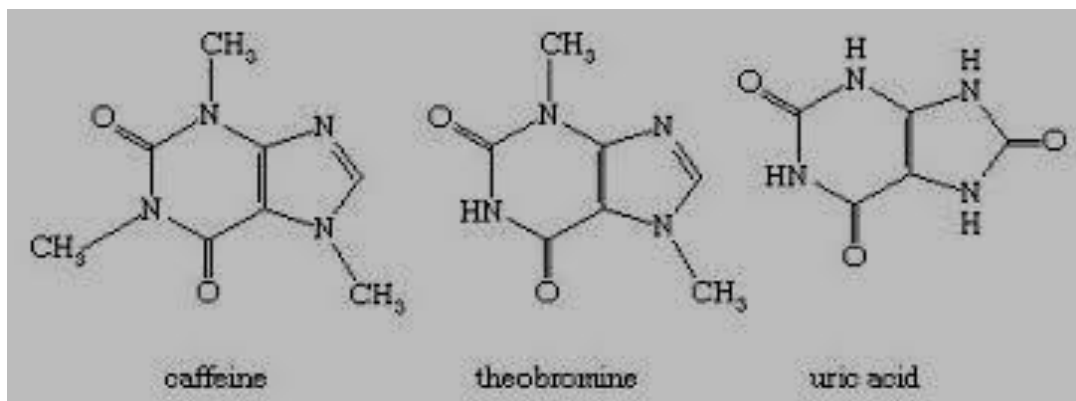
Fig(1) :Bicycles compounds as drugs

Another major application of synthesis is in agriculture for control of insects and weeds. Organic synthesis⁽¹⁶⁻²⁴⁾ of hetero cycles (nitrogen or sulfur- atoms) also plays a part in the development of many consumer products



Fig(2) : N-Bicycles compound in Supplier

The unique power of synthesis is the ability to create new molecules and materials with valuable properties⁽²⁵⁻³³⁾.



Fig(3) : N-Bicycles compound in Bio-Molecule

II.EXPERIMENTAL & MATERIALS

The Materials supplied from (Fluka and Sigma) Company, while microbial assay carried out in college of education, in Bio – lab in biological department., Chemical Studying and preparation of concentrations carried out in chemistry department.

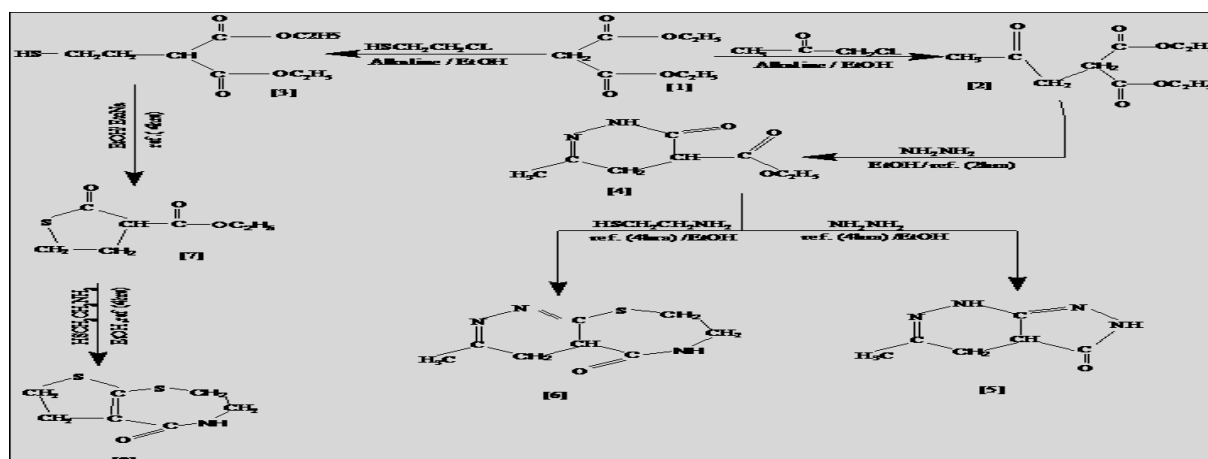
EXPERIMENTAL PART:

STEP .1: Schemes of Formatted Cyclic Compounds:

In our schemes, we synthesized compounds, but now we will study the biological activity for them in this work.

STEP .2 : Microbial Assay:

Microbial Assay of formatted cyclic compounds have been studied for their antibacterial activities by agar through biological methods⁽¹⁶⁾. The antibacterial activities were done at (0.001 M) concentrations in (DMSO) - solvent through using two types of bacteria (*Staphylococcus aureu* and *Salmonella typhi*). These bacterial strains were incubated for 24 hr at 37°C.



Scheme (1): Formatted Cyclic Compounds

II.RESULTS AND DISCUSSION

The formatted cyclic compounds studied for Biological Activity against two types of bacteria.

Activity Assay^(16,19) :

The test of the sensitivity of the bacteria, which included work on two types of bacteria to measure the biological activity of certain compounds which bacteria positive for the dye gram (bacteria *Staphylococcus aureu*)

and negative gram (bacteria *Salmonella .typhi*), and Table (1) shows the diameter of inhibition zone for vehicles chemical measured in mm towards the bacteria.

Table 1: Biological Activity (Inhibition Zone in (mm)) of Compounds in Concentration (0.001 M).

Comp. No.	(G +) <i>Staphylococcus. Aureus</i>	(G -) <i>Salmonella .typhi</i>
[1]	-----	-----
[2]	>4	-----
[3]	6	>4
[4]	10	6
[5]	12	8
[6]	18	12
[7]	14	8
[8]	18	10

The results appeared that the Activity of formatted compounds (6 , 8) the effectiveness of anti-resistant bacteria is much higher than other cyclic compounds in the inhibition of bacteria, sulfur and nitrogen atoms in cycles gave vital to the effectiveness of many of the bacteria, and the following photos show the following:



Picture (1).The amount of inhibition of the compounds on

Staphylococcus Aureu



Picture (2). The amount of inhibition of the compounds on

Salmonella .typhi

Chromatographic Studies of Cyclic Formatted Compounds :

Solutions of compounds were prepared in concentration (1 ppm), and injected by using a syringe (Hamilton) in capacity (10ml) through nitrogen (gas flow 25 ml/min) . Our compounds separated according to interactions or polarity of terminal cyclic compounds and their molecular weight ., for this reason , compounds [1] and

[7] separated in the first time due to⁽²¹⁾ its polarity (less than other compounds), while the last one compounds [6] and [8] , because of their high molecular weight more than other compounds , figures (4-9).

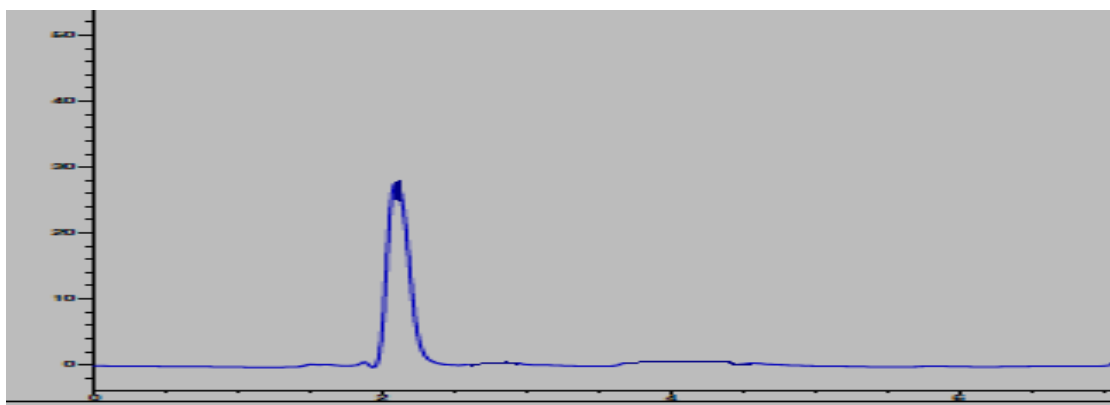


Fig (4): Chromotogram of Compound [1]

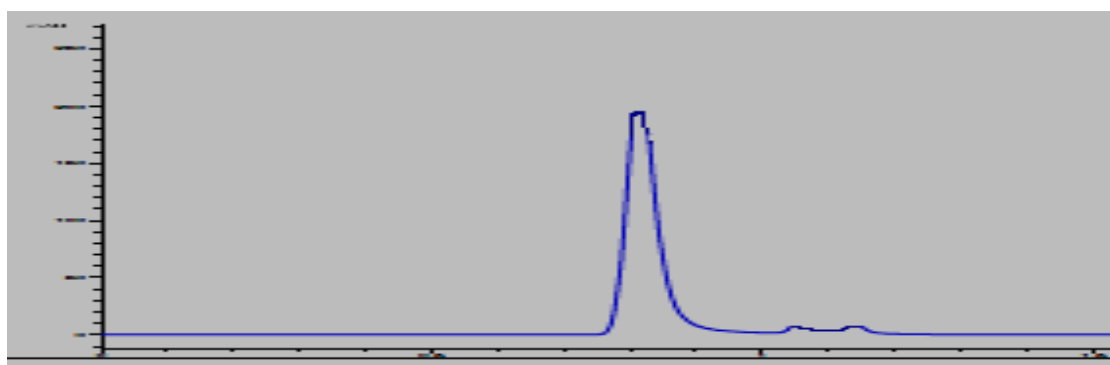


Fig (5): Chromotogram of Compound [3]

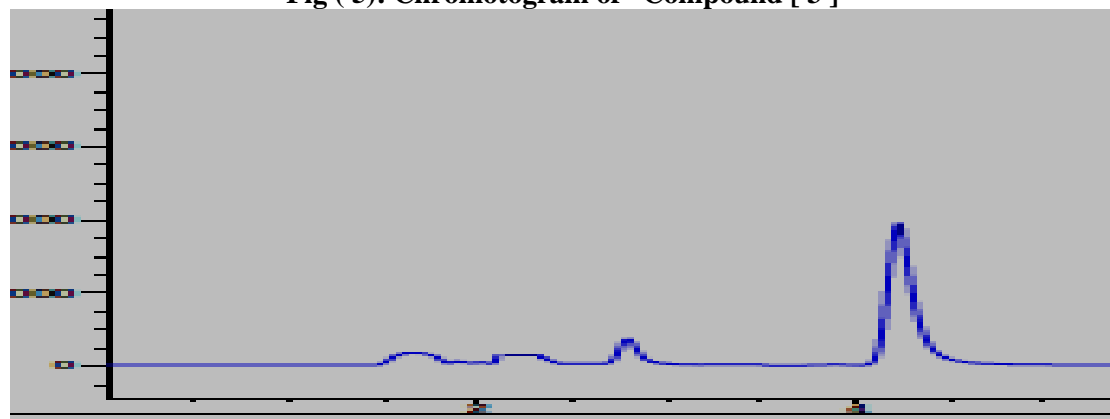


Fig (6): Chromotogram of Compound [4]

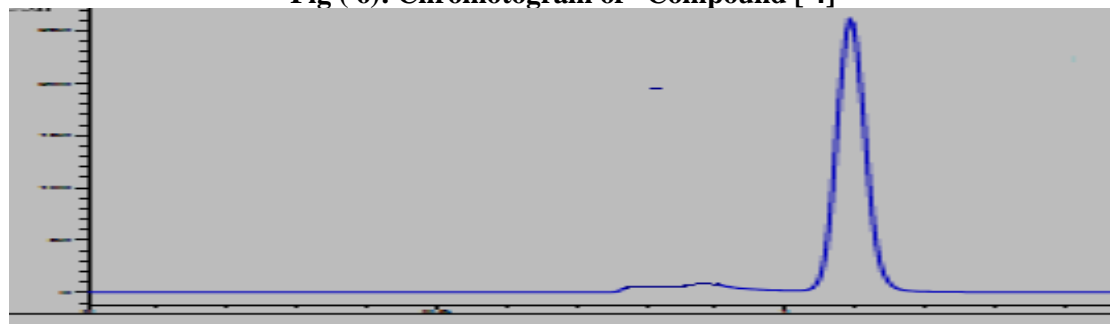


Fig (7): Chromotogram of Compound [5]

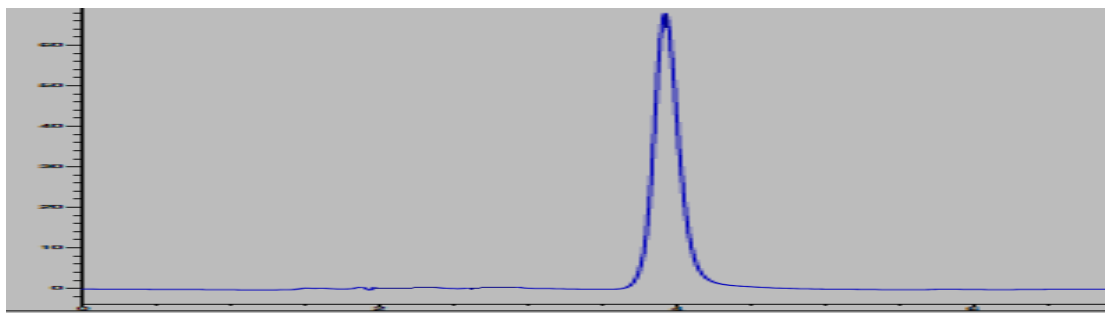


Fig (8): Chromotogram of Compound [7]

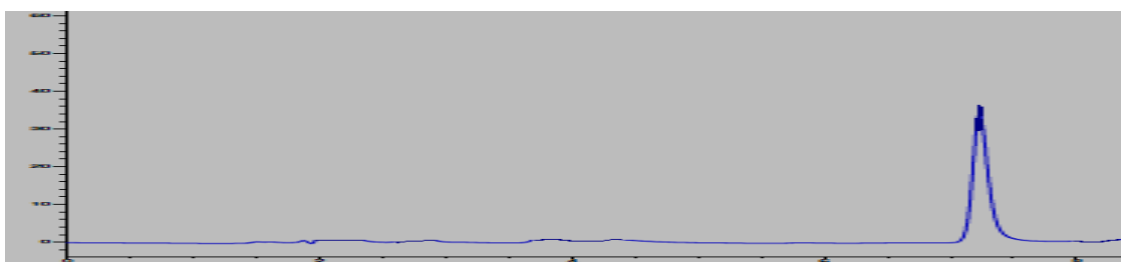


Fig (9): Chromotogram of Compound [6]

Conclusions

The formatted cyclic compounds separated according to interactions with polarity of terminal cyclic compounds and their molecular weight ., for this reason , and most of our formatted cyclic compounds gave good results against selected bacteria.

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