

STUDYING OF AMIDE DERIVATIVES BEHAVIOR ON BACTERIA

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ABSTRACT

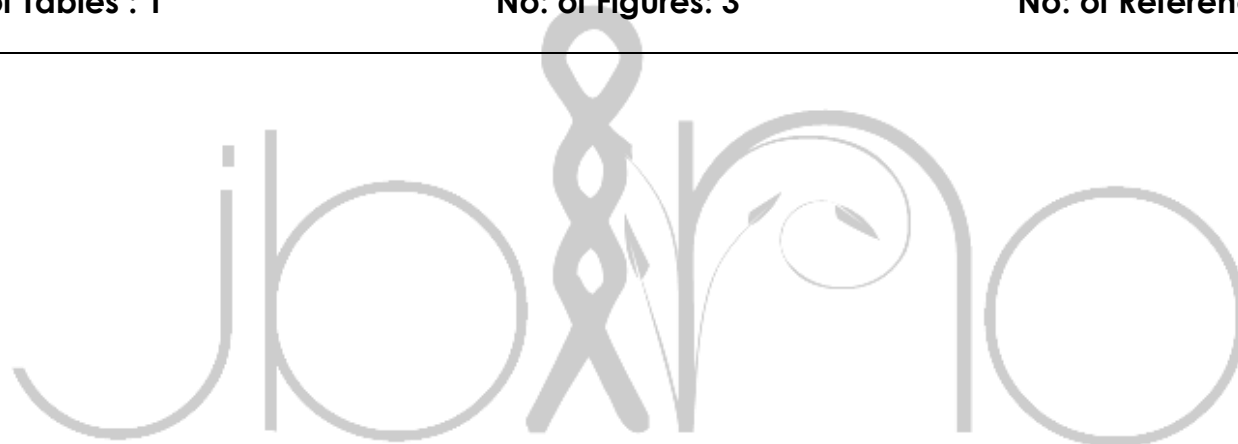
In previously work of our paper(1), we synthesized several organic compound , but in this paper we will study biological applications for some compounds against two type of bacteria towards some compound [9- 20].

Keywords: Antibacterial , Biological Assay.

No: of Tables : 1

No: of Figures: 3

No: of References: 31



INTRODUCTION

Amides are a class of chemical compounds that contain the $-CONH_2$ group, it is present in many of the chemical compounds, so Amide group is very important to prepare a wide range of industrial compound(1), and got a special importance in the pharmaceutical industry because play an active role in biological system(2). Some of them are used to treat different diseases like medicine of the thyroid gland and thyroid leukemia (3), Effective in stimulating the heart and lungs work (4), Effective against breast cancers(5), and Amide compound showed biological active towards Bacteria and fungi (6), types of viruses(7), Effective towards bacteria *Staphylococcus aureus* and *E. coli*(8)., Amides are pervasive in nature and technology as structural materials. The amide linkage is easily formed, confers structural rigidity, and resists hydrolysis. Nylons are polyamides; Amide linkages constitute a defining molecular feature of proteins, the secondary structure of which is due in part to the hydrogen bonding abilities of amides. Amide linkages in a biochemical context are called peptide bonds when they occur in the main chain of a protein and isopeptide bonds when they occur to a side-chain of the protein. Proteins can have structural roles, such as in hair or

spider silk, but also nearly all enzymes are proteins.

Many drugs are amides, including paracetamol drug, penicillin drug and in other applications(9-11) and uses in most fields(12-15).

Experimental & Materials:

All chemicals and instrumentals carried out in college of education, biological studying carried out in Bio – lab in biological department. Chemical Studying carried out in chemistry department.

EXPERIMENTAL PROCEDURES

The biological activities of synthesized compounds have been studied for their antibacterial activities by agar via biological methods (16-19). The antibacterial activities were done at (0.001 M) concentrations in (DMSO) solvent through using two types of bacteria (*Staphylococcus aureus* and *Salmonella typhi*). These bacterial strains were incubated for 24 hr at 37°C.

Synthesized Compounds In Our Past Work (1):In our previously paper (1), we synthesized (12) compounds, but now we will study the biological activity for them in this work:

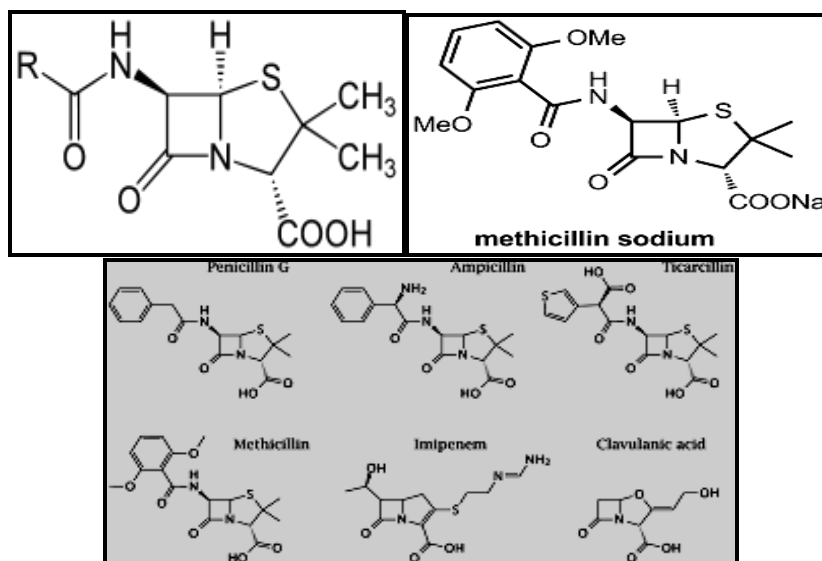


Fig 1: Penicillin Drugs

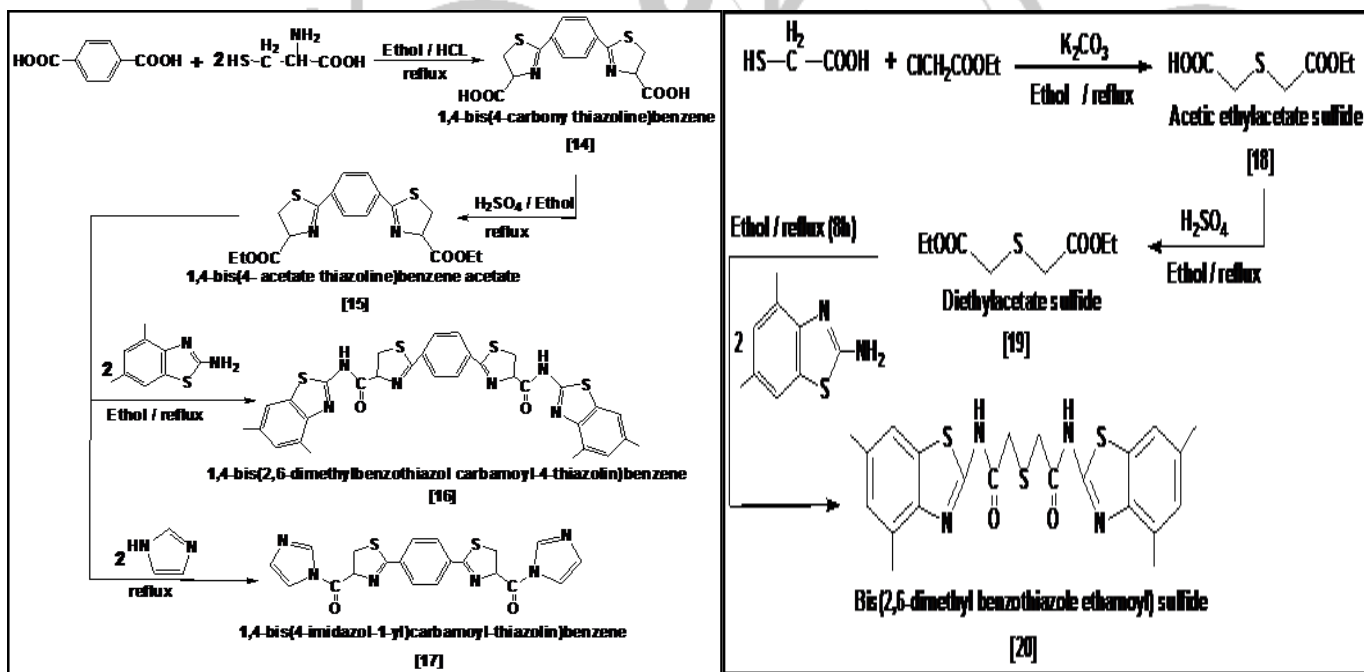


Fig 2: Mechanism of Reactions

RESULTS AND DISCUSSION

In past paper of our work (1), we synthesized these Amide compounds but now we will study of Biological Activity against two types of bacteria.

Biological Tests

The test of the sensitivity of the bacterial isolates were positive for gram, which

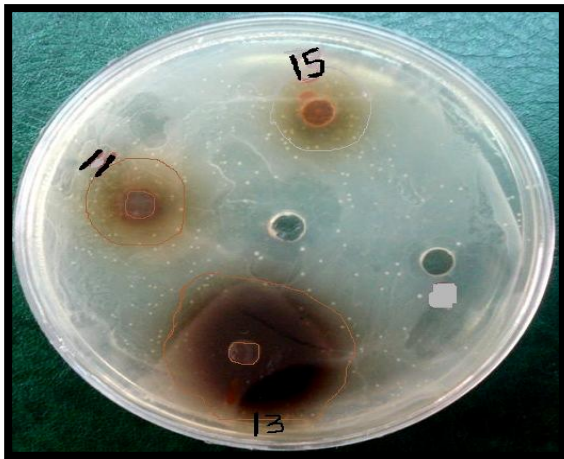
included work on two types of bacteria to measure the biological activity of certain compounds which bacteria positive for the dye Gram (bacteria *Staphylococcus aureus*) and negative gram (bacteria *Salmonella .typhi*), and Table (1) shows the diameter of inhibition zone for vehicles chemical measured in mm towards the species bacterial

Table 1: Biological Activity (Inhibition Zone in (mm)) of Compounds [20– 9] in Concentration (0.001 M).

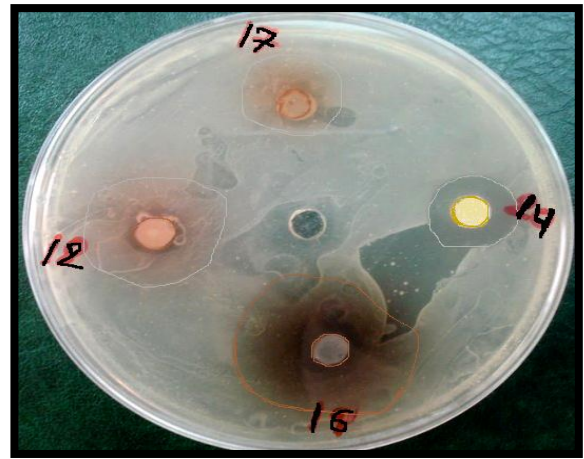
Comp. No.	(G +)	(G -)
	<i>Staphylococcus. Aureus</i>	<i>Salmonella .typhi</i>
[8]	14	8
[9]	12	8
[10]	10	8
[11]	18	12
[12]	22	14
[13]	26	20
[14]	12	10
[15]	18	10
[16]	26	16
[17]	20	14
[18]	6	6<

The results showed the Biological Activity for compounds (13,16, 12, 17) the effectiveness of anti-resistant bacteria is much higher than other vehicles in the inhibition of the positive and negative bacteria, gram growth. And also Because these compounds contain multiple episodes of imidazole and thiazole, which gives vital to the effectiveness of many of the bacteria, and the following photos show the following:

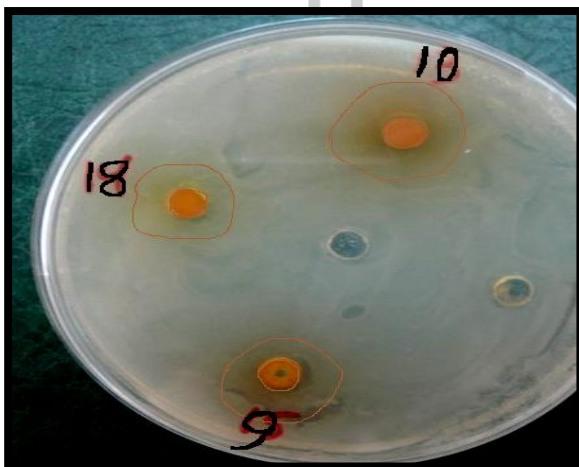
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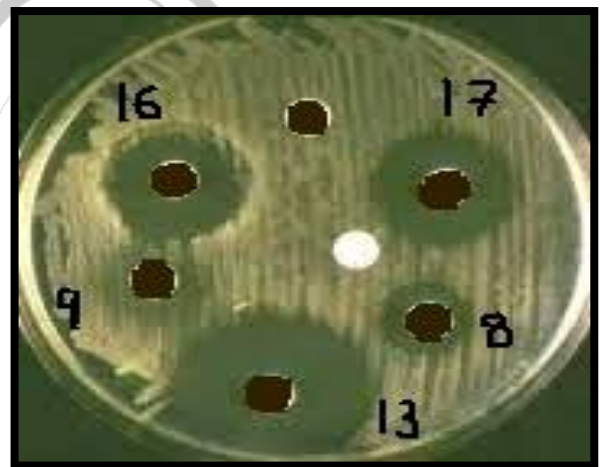
(a)



(b)



(c)



(d)

Fig: 3

a : Plate 1.The amount of inhibition of the compound[11, 13, 15]on *Staphylococcus Aureu*

b : The amount of inhibition of the compound[12, 14, 16, 17] on *Staphylococcus Aureu*

c : The amount of inhibition of the compounds[9, 10, 18] on *Staphylococcus Aureu*

d: The amount of inhibition of the compounds[8, 9,13,16,17] on *Salmonella typhi*

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