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Pharmaceutical Sciences **Review Article……!!!**

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UREAS AS A CORE UNIT BIOLOGICAL EVALUATION AGENT-MINI REVIEW

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Keywords:

Antibacterial activity, Antifungal activity, Schiff bases

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ABSTRACT

Purpose**:** The article is aimed to discuss characterize and screening the biological activity of a series of ureas -as a Core Biological evaluation Agent ureas are of great biological interest, especially as anti-tubercular antibacterial. The important and structural diversity of biologically active antibiotics led to the development of many novel methods for the construction of appropriately substituted ureas with attendant control of functional group and stereochemistry. ureas derivatives are reported to show a variety of antimicrobial,anticonvulsant,anti-inflammatory and cardiovascular activities, antimycobacterial activity, antibacterial activity , antihypertensive activity.

1. INTRODUCTION

Ureides are compounds, which essentially constitutes urea as a sub structural core either in cyclic or open chain system. Ureido derivatives are one of the oldest classes of bioactive, widely used as anti-infective agents[1]. Ureides exhibit anti-infective, antitumor, anticancer and antibacterial activities. These also used in the treatment of various metabolic disorders including diabetes and hyperlipidemia.

Sartori and Maggi[1]. Recently reviewed the synthesis of urea and ureides. The commonly employed methods to obtain ureides are,

a. Reaction of an amino derivative with an isocyanate to yield urea derivative;

b. Reaction of an amino compound with alkyl chloroform ate followed by reaction with another amine to give urea derivative

c. Reaction of carbonyl chloride with amino derivative to obtain symmetrical urea derivative and

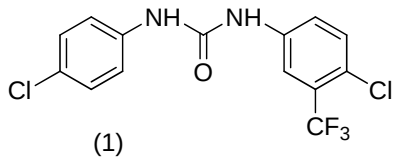
d. Reaction of amine with carbonyldiimidazole (CDI) followed by reaction with another amine to yield urea derivative. The new methods of the preparation of urea derivatives have also been recently reported [2-3].

Cobalt carbonyl induced superfast synthesis of symmetrical urea's under microwave condition has been reported by Larhed et al[4].

The ureides are found to exhibit bacteriostatic and bactericidal action on gram negative bacteria, and to a lesser extent on the gram positive organisms[5-6].

The review of literatures describes that the ureides were found to have a broad spectrum of biological activities [7-14].

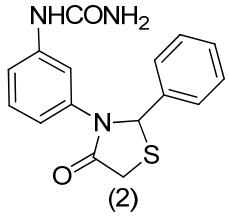
Novel 1-(4-chloro-3-(trifluoromethyl)phenyl)-3-(4-chlorophenyl)urea (1) have been synthesized and screened for their antibacterial activity by Beaver et al[15].



(1)

1-(4-chloro-3-(tri fluoro methyl) phenyl)-3-(4-chlorophenyl) urea

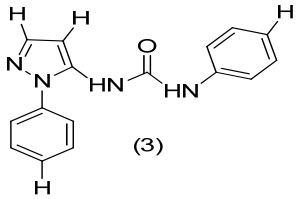
Novel 1-(3-(4-oxo-2-phenylthiazolidin-3-yl) phenyl) urea (2) have been synthesized and screened for their antibacterial activity by Desai *et al* [16].



(2)

1-(3-(4-oxo-2-phenylthiazolidin-3-yl) phenyl)urea (2)

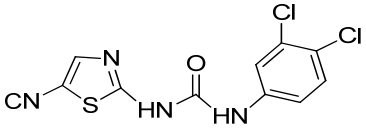
Novel 1-(3-(4-oxo-2-phenylthiazolidin-3-yl) phenyl)urea (3) have been synthesized and screened for their antibacterial activity by Kene Jr *et al* [17].



(3)

1-phenyl-3-(1-phenyl-1H-pyrazol-5-yl)urea(3)

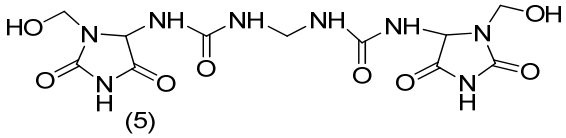
Francisco.D. Dand Co-workers [18] have synthesized 1-(3,4-dichlorophenyl)-3-(5-isocyanothiazol-2-yl)urea(4) for Inhibition of MuraA and MuraB enzymes .



(4)

1-(3,4-dichlorophenyl)-3-(5-isocyanothiazol-2-yl)urea(4)

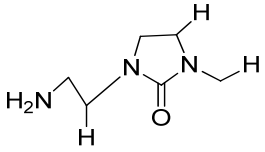
Novel 1,1'-methylenebis(3-(3-(hydroxymethyl)-2,5-dioxoimidazolidin-4-yl)urea) (5) have been synthesized and screened for their antibacterial activity by US FDA,1996 [19].



(5)

1,1'-methylenebis(3-(3-(hydroxymethyl)-2,5-dioxoimidazolidin-4-yl)urea) (5)

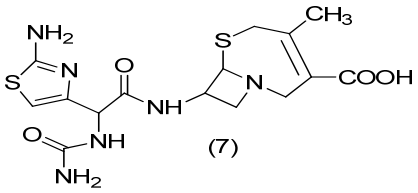
Novel 1-(2-aminoethyl)-3-methylimidazolidin-2-one(6) have been synthesized and screened for their antibacterial activity by Hough ten et al[20]



(6)

1-(2-aminoethyl)-3-methylimidazolidin-2-one(6)

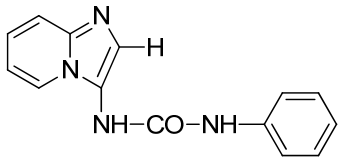
Polacek and Stark [303] have synthesized 8-(2-(2-aminothiazol-4-yl)-2-ureidoacetamido)-4-methyl-6-thia-1-azabicyclo [5.2.0] non-3-ene-3-carboxylic acid (7) and studied their antibacterial activity [21].



(7)

8-(2-(2-aminothiazol-4-yl)-2-ureidoacetamido)-4-methyl-6-thia-1-azabicyclo [5.2.0] non-3-ene-3-carboxylic acid (7)

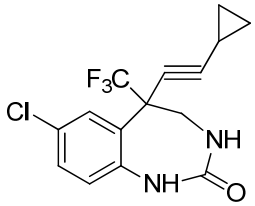
Guieffier and his co-workers [22] have discovered 1-(imidazol[1,2-a]pyridin-3-yl)-3-phenylurea(8) and studied their antimicrobial activity [22].



(8)

1-(imidazo[1,2-a]pyridin-3-yl)-3-phenylurea(8)

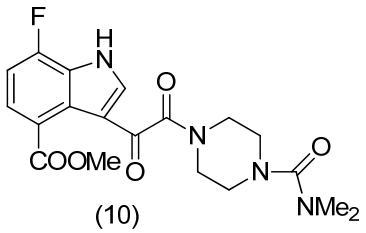
Rodgers and Cocuzza [23] have synthesized 7-chloro-5-(cyclopropylethynyl)-5-(trifluoromethyl)-4,5-dihydro-1H-benzo[d][1,3]diazepin-2(3H)-one(9) and studied their HIV reverse transcriptase inhibition [21].



(9)

7-chloro-5-(cyclopropylethynyl)-5-(trifluoromethyl)-4,5-dihydro-1H-benzo[d][1,3]diazepin-2(3H)-one(9)

Novel methyl 3-(2-(4-(dimethylcarbamoyl)piperazin-1-yl)-2-oxoacetyl)-7-fluoro-1H-indole-4-carboxylate(10)have been synthesized,screened for their antibacterial activity by Kene *et al* [24].



(10)

Methyl 3-(2-(4-(dimethylcarbamoyl)piperazin-1-yl)-2-oxoacetyl)-7-fluoro-1H-indole-4-carboxylate(10)

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