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Abstract

Treatment of Anthranilic acid with chloroacetylchloride in presence of sodium acetate gave 2-(chloromethyl)-4H-benzo[d][1,3]oxazin-4-one (1), that fused with ammonium acetate to give 2-(aminomethyl)quinazolin-4(3H)-one (2). The compounds 2,3-dihydro-1H-pyrazino[2,1-b]quinazoline-4,6-dione [3] was prepared from cyclization of (2) with ethyl chloroacetate in presence of fused sodium acetate. Treatment of (3) with acetic anhydride and/or with acetic anhydride in presence of fused sodium acetate yielded the corresponding 2-acetyl-2,3-dihydro-1H-pyrazino[2,1-b]quinazoline-4,6-dione (4) and 1,2,3-triacetyl-2,3-dihydro-1H-pyrazino[2,1-b]quinazoline-4,6-dione (5) respectively. The reaction of (3) with diazonium chloride gave 1,3-bis((aryl)diazenyl)-2,3-dihydro-1H-pyrazino[2,1-b]quinazoline-4,6-dione (6) which can be acetylated with acetic anhydride to give 2-acetyl-1,3-bis((aryl)diazenyl)-2,3-dihydro-1H-pyrazino[2,1-b]quinazoline-4,6-dione (7). The electron impact mass spectra of the above series of compounds have also been recorded and their fragmentation pattern is discussed. The prepared compounds also exhibited antimicrobial activity.

Keywords: benzo[d][1,3]oxazinone, pyrazine, quinazolin-4,6-dione, Antimicrobial activity

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Abstract

Amonalysis of 2-(chloromethyl)-4-oxo-benzoxainone(1) with ammonium acetate under fusion gave the corresponding 2-(aminomethyl)-4(3H)-quinazolinone(2). 4-Aryl-1H-pyrazino[2,1-b]quinazolin-6(2H)-ones(3a-d) were prepared via treatment of 3 with ω-bromomethylarylketones in presence of fused sodium acetate in acetic acid. Acetylation and alkylation of 3 with acetic anhydride, acetic anhydride.fused sodium acetate and alkyl halides yielded the corresponding monoacetyl, diacetyl derivatives(4,5) and N-alkyl derivatives(6). The mass spectral fragmentation patterns of some prepared compounds have been investigated in order to elucidate the structure of the synthesized compounds. Antimicrobial activities were assayed against test bacteria and fungi

Keywords: pyrazino[2, 1-b]quinazolines, mass spectral, synthesis, biological activity.

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Synthesis, Mass spectra and Antimicrobial activity of Some Nitrogen Heterocycles

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Abstract

4-{substituted}-1-[1’-(pyridine-4-yl)ethylidene]-thiosemicarbazones (2 and 4a,b), 2-[1-(pyridine-4-yl-ethylidene)hydrazones]-5,6-dihydro-thiazine-4-one(3) and 3-[1-(pyridine-4-yethylidene)amino]-4-oxo-imidazolidin-2-thione (5) were synthesized via the reaction of 4-acetyl-pyridinethiosemicarbazide with ethyl chloroacetate, ethyl-β-chloropropionate and bromo-methylheterolyl ketones under different conditions. Treatment of 5 with ethyl-β-chloropropionate, diethyl oxalate and aryl diazonium salts afforded the corresponding 1-substituted-imidazolidin-2-thione derivative (6) and 5-substituted-imidazolidin-2-thione derivatives (7 and 8). The electron impact mass spectra of both of the above series of compounds have also been recorded and their fragmentation pattern is discussed. The prepared compounds also exhibited antimicrobial activity.

Keywords: Nitrogen heterocycles, Mass spectra, Antimicrobial activity.

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Preparations, Microbiology and Mass Spectra Fragmentations of Trisubstituted Imidazolidinones

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Abstract

3-(Substituted) amino-imidazolidinones (3a, b) were prepared via condensation of 1-substitued thiosemicarbazones (2a, b) with ethyl chloroacetate in presence of fused sodium acetate. Reaction of (3a,b) with acetic anhydride, ethyl acetate in presence of sodium metal in Xylene and aromatic aldehydes in presence of piperidine yielded the corresponding 1-acetyl-3-(substituted)amino-imidazolidinones(4a,b),5-acetyl-3-(substituted)amino-imidazolidinones (5a,b) and 5-arylidene-3-(substituted)amino-imidazolidinones (6a,b). Bromination of 3a with bromine to give 5-bromo-3-[1(pyridine-4-y lethylidene) amino]-4-oxo-imidazolidin-2-thione (8). The mass spectral fragmentation patterns of some prepared compounds are investigated in order to elucidate the structure of the synthesized compounds. Some of the synthesized compounds also exhibited antimicrobial activities.

Keywords: Imidazolidinones, Microbiology, Mass Spectra, Antimicrobial activity.
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