Synthesis and antibacterial studies of azodispersed dyes derived from 2-(thiazol-2-yl)phthalazine-1,4-diones

Khalil, AM (Khalil, A. M.)[1]; Berghot, MA (Berghot, M. A.)[1]; Gouda, MA (Gouda, M. A.)[1]; El Bialy, SA (El Bialy, S. A.)[2]

Abstract

A dibenzobarrelene derivative was used as key intermediate for the synthesis of 2-(4-(methyl/phenylthiaz-ol-2-yl)-2,3,4a,5,10,10a-hexahydro-5,10-benzenobenzo[g]phthalazine-1,4-diones. These compounds were coupled with the appropriate diazonium chlorides to give the corresponding 5-(arylazo)thiazole derivatives. The synthesized dyes were applied to polyester as disperse dyes, and their antibacterial, color measurement, and fastness properties were evaluated.

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Addresses:
[1] Mansoura Univ, Fac Sci, Dept Chem, Mansoura 35516, Egypt
[2] Mansoura Univ, Fac Pharm, Dept Organ Pharmaceut Chem, Mansoura 35516, Egypt
E-mail Address: dr_mostafa_chem@yahoo.com
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27. Mansoura University, Mansoura, Egypt

Synthesis and antimicrobial of new anthraquinone derivatives incorporating pyrazole moiety

Gouda, MA (Gouda, M. A.)[1]; Berghot, MA (Berghot, M. A.)[1]; Shoeib, AI (Shoeib, A. I.)[1]; Khalil, AM (Khalil, A. M.)[1]

Abstract

Treatment of 2-cyano-N-(9,10-dioxo-9,10-dihydro-anthracen-2-yl)-acetamide (1) with phenyl isothiocyanate/dimethylsulphate afforded the corresponding ketene N,S-acetal 2 which upon treatment with hydrazine hydrate and 4-aminoantipyrine afforded the pyrazolo derivatives 3 and 4, respectively. 3-aminopyrazole derivative 3 was utilized as key intermediate for the synthesis of pyrazolo[3,4-d]pyrimidine 5, pentaaza-as-indacene 6, triaza-cyclopenta[c]phenanthrene 7, pyrazolo[1,5-a]pyrimidine 8, 9 and (dimethyl-pyrrol-1-yl)pyrazole 10 derivatives. Furthermore, treatment of 1 with DMF/DMA gave the corresponding acrylamide derivative 11 which upon treatment with hydrazine hydrate afforded the corresponding 3-aminopyrazole derivative 12. Moreover, coupling of 1 with 4,6-dimethyl-1H-pyrazolo[3,4-b]pyridin-3-diazonium chloride gave the hydrazone derivative 13 which upon cyclization with acetic acid afforded the corresponding pentaaza-fluorene derivative 14. Representative compounds of the synthesized products were evaluated as antimicrobial agents. Some of these compounds exhibited promising activities.

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Reprint Address: Gouda, MA (reprint author), Mansoura Univ, Dept Chem, Fac Sci, El Gomhoria St, Mansoura 35516, Egypt.
Addresses:
[1] Mansoura Univ, Dept Chem, Fac Sci, Mansoura 35516, Egypt
E-mail Address: dr_mostafa_chem@yahoo.com
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Synthesis and antimicrobial activities of some new thiazole and pyrazole derivatives based on 4,5,6,7-tetrahydrobenzothiophene moiety

Gouda, MA (Gouda, M. A.)[1]; Berghot, MA (Berghot, M. A.)[1]; El-Ghani, GEA (El-Ghani, Ghada E. Abd)[1]; Khalil, AM (Khalil, A. M.)[1]

Abstract

2-(5-oxothiazolidinone)-cyanoacetamido derivative 3 was prepared in two steps by eaction of 2(2-cyano-acetylamino)-4,5,6,7-tetrahydro-benzo[b]thiophene-3-arboxamide (1) with phenyl isothiocyanate and chloroacetyl chloride, which iazocoupled with p-tolyldiazonium chloride in pyridine to afford the corresponding ydrazono derivative 4. Also, condensation of 3 with p-anisaldehyde gave the orresponding arylidine derivative 5. Treatment of 2 with dimethyl sulfate afforded the etene N,S-acetal 9 which give 5-amino pyrazole derivative 10 upon treatment with ydrazine hydrate. Compound 10 was used as key intermediate for synthesis of yrazolo[5,1-c][1,2,4]triazine 13a, b, pyrazolo[5,1-a]pyrimidine 14-17 and pyrolo yrazole 18 derivatives. Finally, condensation of 1 with DMF-DMA afforded the orresponding acryloamide derivative 19, which afforded the corresponding pyrazole erivative 20 upon heating with hydrazine hydrate. All new synthesized compounds ere evaluated as antimicrobial agents; some of them exhibited promising activities.

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Reprint Address: Gouda, MA (reprint author), Mansoura Univ, Fac Sci, Dept Chem, l Comhoria St, Mansoura 35516, Egypt.
Addresses:
1] Mansoura Univ, Fac Sci, Dept Chem, Mansoura 35516, Egypt
E-mail Address: dr_mostafa_chem@yahoo.com
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Synthesis and study of some new 1,3-isoindoledione derivatives as potential antibacterial agents

Khalil, AM (Khalil, A. M.)[1]; Berghot, MA (Berghot, M. A.)[1]; Gouda, MA (Gouda, M. A.)[1]

Abstract

In an effort to establish new candidates with improved antibacterial activities, we reported here the synthesis and in vitro antibacterial evaluation of various series of 2-substituted-3a,4,9,9a-tetrahydro-4,9-benzeno-benz[f]isoindole-1,3-diones: 4-acetyl-phenyl 2, 2,2-dibromoacetylphenyl 3, benzimidazole 4, acetylbenzimidazole 5, aminophenyl 6, acetamide 7, naphthalene 8, disulfide 9, mercaptophenyl 10, hydroxyphenyl 11, phenyl ester 12, triazole 13, benzothiophene 14, benzothiazole 15 phenylazo 16a, b and aminomethane 17 derivatives. The newly synthesized compounds were characterized by (IR, (1)H NMR, (13)C NMR and mass spectrum studies). Representative compounds of the synthesized products were established and evaluated as antibacterial agents.

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Reprint Address: Gouda, MA (reprint author), Mansoura Univ, Fac Sci, Dept Chem, Mansoura 35516, Egypt.
Addresses:
[1] Mansoura Univ, Fac Sci, Dept Chem, Mansoura 35516, Egypt
E-mail Address: dr_mostafa_chem@yahoo.com
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Synthesis and Antimicrobial of Certain New Thiazolidinone, Thiazoline, and Thiophene Derivatives

Gouda, MA (Gouda, M. A.)[1]; Berghot, MA (Berghot, M. A.)[1]; Shoeib, AI (Shoeib, A. I.)[1]; Khalil, AM (Khalil, A. M.)[1]

Abstract

2-Cyano-N-(9,10-dioxo-9,10-dihydro-anthracen-2-yl)-acetamide (1) was utilized as a key intermediate for the synthesis of thiazolidin-4-one 2 and thiocarbamoyl 5 derivatives via reaction with 2-sulfanylacetic acid and phenyl isothiocyanate, respectively. Compound 5 reacted with different -halo compounds to give thiazolidin-5-one 4, thiazolidine 7a,b, thiazolidin-4-one 8, and thiophene derivatives 10a,b. Thiazoline 6 and tetrahydro-benzothiophene 12 derivatives were obtained via a one-pot reaction of compound 1 with phenyl isothiocyanate/sulfur and cyclohexanone/sulfur, respectively. Representative compounds of the synthesized products were evaluated as antimicrobial agents. Some of these compounds exhibited promising activities. Supplemental materials are available for this article. Go to the publisher's online edition of Phosphorus, Sulfur, and Silicon and the Related Elements to view the free supplemental file

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Reprint Address: Gouda, MA (reprint author), Mansoura Univ, Fac Sci, Dept Chem, El Gomhoria St, Mansoura 35516, Egypt.
Addresses:
[1] Mansoura Univ, Fac Sci, Dept Chem, Mansoura 35516, Egypt
E-mail Address: dr_mostafa_chem@yahoo.com
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