SYNTHESIS AND PHARMACOLOGICAL EVALUATION OF SOME NOVEL 5-(PYRAZOL-3-YL)THIADIAZOLE AND OXADIAZOLE DERIVATIVES AS POTENTIAL HYPOGLYCEMIC AGENTS

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Abstract

Four series of 5-(pyrazol-3-yl) thiadiazole and oxadiazole derivatives (Va-c, VIa-c, VIIIa-c, IXa-c) have been synthesized from 5-arylazo-3-carbethoxy-4-methoxy-1-phenylpyrazole (Ia-c) with a view to investigate their pharmacological activity. The structure of the synthesized products was inferred from elemental and spectral data. The hypoglycemic effect, antimicrobial activity and toxicity of these potential chemotherapeutic agents were evaluated Nineteen of these products were effective, when administered at an oral dose of 100 mg/kg body weight in inducing a marked reduction in blood glucose level.

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References:

1-Title: [not available]
Author(s): ALVES MAM
Source: SOC BIOL FILIALES Volume: 145 Pages: 604 Published: 1951

2. Title: [not available]
Author(s): CAMPBELL GD
Source: ORAL HYPOGLYCEMIC AG Pages: 23 Published: 1969

3. Title: SOME HYPOGLYCEMIC THIADIAZOLES
Author(s): CHUBB, FL; NISSENBAUM, J
Source: CANADIAN JOURNAL OF CHEMISTRY-REVUE CANADIENNE DE CHIMIE Volume: 37 Issue: 6 Pages: 1121-1123 DOI: 10.1139/v59-165
Published: 1959

4. Title: [not available]
Author(s): CREUTZFELDT W

Source: ORAL TREATMENT DIABE Pages: 2 Published: 1961

5. Title: EFFECTS OF 5-CARBOXY-3-METHYLISOXAZOLE ON CARBOHYDRATE AND FAT METABOLISM (View record in MEDLINE)
Author(s): DULIN, WE; GERRITSE.GC
Source: PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE Volume: 121 Issue: 3 Pages: 777-& Published: 1966

6. Title: Comparative study of the hypoglycemic action of various sulfonamides
Foreign Title: Estudio comparativo de la accion hipoglucemiante de deversas sulfamidas
Author(s): GARCIA-BLANCO, J.; ANTON, V.
Source: REV ESPANOLA FISIOL Volume: 14 Issue: (3) Pages: 123-127 Published: 1958

7. Title: POTENTIAL ANTIDIABETICS .3. 4-ARYLHYDRAZONO-1-CARBAMOYL-3-METHYL-2-PYRAZOLIN-5-ONES AND 4-ARYLAZO-1-(2,4-DINITROPHENYL)-3-METHYL-5-PHENYLPYRAZOLES
Author(s): GARG, HG; SINGH, PP
Source: JOURNAL OF THE CHEMICAL SOCIETY C-ORGANIC Issue: 8 Pages: 1141-& DOI: 10.1039/j39690001141 Published: 1969

8. Title: Potential antidiabetics. I. 1-(2,4-dinitrophenyl)-3,5-dimethyl-4-arylazopyrazoles. (View record in MEDLINE)
Author(s): Garg, H G; Singh, P P
Source: Journal of medicinal chemistry Volume: 11 Issue: 5 Pages: 1103-4 DOI: 10.1021/jm00311a057 Published: 1968-Sep

9. Title: NEW COMPOUNDS - POTENTIAL ANTIDIABETICS .4. 1-(2,4-DINITROPHENYL)-3,K-DIPHENYL-4-ARYLAZOPYRAZOLES AND 1-CARBAMOLY-3,5-DIPHENYL-4-ARYLAZOPYRAZOLES (View record in MEDLINE)
Author(s): GARG, HG; SINGH, PP
Source: JOURNAL OF PHARMACEUTICAL SCIENCES Volume: 59 Issue: 6 Pages: 876-& DOI: 10.1002/jps.2600590641 Published: 1970

10. Title: EFFECT OF A NEW HYPOGLYCEMIC AGENT 3,5-DIMETHYLPYRAZOLE ON CARBOHYDRATE AND FREE FATTY ACID METABOLISM (View record in MEDLINE)
Author(s): GERRITSE.GC; DULIN, WE
Source: DIABETES Volume: 14 Issue: 8 Pages: 507-& Published: 1965

11. Title: EFFECT OF 5-METHYLPYRAZOLE-3-CARBOXYLIC ACID ON CARBOHYDRATE AND FREE FATTY ACID METABOLISM (View record in MEDLINE)
Author(s): GERRITSE.GC; DULIN, WE
Source: JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS Volume: 150 Issue: 3 Pages: 491-& Published: 1965

12. Title: SYNTHESIS AND PHARMACOLOGICAL EVALUATION OF

NOVEL SERIES OF SULFONATE ESTER-CONTAINING 1,3,4-OXADIAZOLE DERIVATIVES WITH ANTICIPATED HYPOGLYCEMIC ACTIVITY
Author(s): GIRGES, MM
Source: ARZNEIMITTEL-FORSCHUNG/DRUG RESEARCH Volume: 44-1 Issue: 4 Pages: 490-495 Published: APR 1994

13. Title: SYNTHESIS AND CHARACTERIZATION OF SOME NOVEL SUBSTITUTED BENZENESULFONAMIDES OF POTENTIAL HYPOGLYCEMIC ACTIVITY
Author(s): HANNA, MA; SAID, SB; WALY, MA
Source: ARZNEIMITTEL-FORSCHUNG/DRUG RESEARCH Volume: 44-2 Issue: 9 Pages: 1029-1031 Published: SEP 1994

14. Title: [not available]
Author(s): LEDNICER D
Source: ORGANIC CHEM DRUG SY Volume: 2 Pages: 272 Published: 1980

15. Title: SUBSTITUENT EFFECTS ON ACIDITIES AND TAUTOMERIC STRUCTURES OF 1-ARYL-3-ETHOXYCARBONYL-4-PYRAZOLONES AND THEIR 5-ARYLAZO DERIVATIVES
Author(s): SHAWALI, AS; HASSANEEN, HM; HANNA, MA
Source: HETEROCYCLES Volume: 15 Issue: 2 Pages: 697-708 Published: 1981

16. Title: [not available]Author(s): SMITH CC
Source: J PHARMACOL EXP THER Volume: 77 Pages: 392 Published: 1943

17. Title: [not available]
Author(s): SOMOGYI M
Source: J BIOL CHEM Volume: 69 Pages: 160 Published: 1945

18. Title: [not available]
Author(s): STEWART FS
Source: BACTERIOLOGY VIROLOG Pages: 68 Published: 1979

19. Title: ANTIDIABETIC ACTIVITY OF 3,5-DIMETHYLPYRAZOLES (View record in MEDLINE)
Author(s): WRIGHT, JB; MARKILLI.JH; DULIN, WE
Source: JOURNAL OF MEDICINAL CHEMISTRY Volume: 7 Issue: 1 Pages: 102-& DOI: 10.1021/jm00331a022 Published: 1964

Synthetic approaches to some new sulfur-containing heterocycles of anticipated immunosuppressive activity.

Girges, M M; Hanna, M A; Ayyad, S N

Abstract

Several new isolated or fused heterocyclic ring systems that accomodate the isothioureido functionality, often associated with immunosuppressive activity, were synthesized for possible use as immunosuppressive agents. Preparation of these anchored heterocycles was achieved via a multi-step synthesis starting with the key intermediate thiazolyl thiourea derivative (I). Structure of the newly synthesized products was confirmed using both of elemental and spectral analyses.
Address: Chemistry Department, Mansoura University, Egypt.
Research Areas: Pharmacology & Pharmacy; Microbiology; Allergy; Immunology (provided by Thomson Reuters)

Source: Bollettino chimico farmaceutico Volume: 134 Issue: 4 Pages: 204-8 Published: 1995-Apr
Address: Chemistry Department, Mansoura University, Egypt.

Synthetic approaches and biological evaluation of some new sulfonate ester-containing quinazoline derivatives as potentially active antimicrobial agents.

Habib, O M; Girges, M M; Moawad, E B; el-Shafei, A M

Abstract

Several sulfonate ester-containing quinazolinone derivatives that are substituted with, isolated or fused, aryl, hetaryl or hetarylphenyl ring systems were synthesized with a view to evaluate their efficacy as new bactericidal and/or fungicidal agents. Synthesis of these products involved prior preparation of the 2-[4'-(benzenesulfonyloxy)phenyl]-3,1- 4(H)-benzoxazin-4-one derivative (2) and subsequent reaction with several nitrogen nucleophiles. The structure of these products were established from elemental and spectral analyses. Most of the prepared compounds showed high antimicrobial activity, comparable to standard chemotherapeutic agents, when screened against different microorganisms.

Address: Chemistry Department, Mansoura Faculty of Science, Mansoura University, Egypt.

Research Areas: Pharmacology & Pharmacy; Microbiology; Mycology (provided by Thomson Reuters)

Address: Chemistry Department, Mansoura University, Egypt.