3-Pyrrolidinones: Michael Addition and Schmidt Rearrangement Reactions

Amer, FA (Amer, F. A.)[2]; Hammouda, M (Hammouda, M.)[2]; El-Ahl, AAS (El-Ahl, A. A. S.)[2]; Abdel-Wahab, BF (Abdel-Wahab, B. F.)[1]

Abstract

Various spiro-pyrano[3,2-b]pyrrolo-2-oxoindolines 3a-d and dicyanopyrano[3,2-b]pyrroles 5a-e have been synthesized in the present study by Michael addition of 3-pyrrolidinones 1 to isatin-3-ylidenes 2 and arylidenemalononitrile 4. Hexahydro-4-oxo-1-aryl-pyrimidine-5-carboxylic acids 7a,b were synthesized from 1 by Schmidt rearrangement.

Source: SYNTHETIC COMMUNICATIONS Volume: 39 Issue: 3 Pages: 416-425 DOI: 10.1080/00397910802378373 Published: 2009

KeyWords Plus: INHIBITORS; AGENTS

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Publisher: TAYLOR & FRANCIS INC, 325 CHESTNUT ST, SUITE 800, PHILADELPHIA, PA 19106 USA

Web of Science Categories: Chemistry, Organic

Research Areas: Chemistry

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1.Title: Synthesis of important new pyrrolo[3,4-c]pyrazoles and pyrazolyl-pyrrolines from heterocyclic beta-ketonitriles

Author(s): Amer, Fathy Abdel-Kader; Hammouda, Metwally; El-Ahl, Abdel-Aziz Sayed; et al.

Source: JOURNAL OF THE CHINESE CHEMICAL SOCIETY Volume: 54 Issue: 6 Pages: 1543-1552 Published: DEC 2007

.2 Title: Short and unexpectedly potent 3-pyrrolidinone type inhibitors of HIV-1 replication

Author(s): Bouygues, M; Medou, M; Chermann, JC; et al.

Source: EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY Volume: 33 Issue: 6 Pages: 445-450 DOI: 10.1016/S0223-5234(98)80045-7 Published: JUN 1998

.3 Title: 3711476 Patent Number: US 3711476

Inventor/Assignee: DIEBOLD JL

.4 Title: 0172705 Patent Number: WO 0172705

Inventor/Assignee: HALAZY S

.5 Title: Novel fluoroquinolone antibacterial agents containing oxime-substituted (aminomethyl)pyrrolidines: Synthesis and antibacterial activity of 7-(4-(aminomethyl)-3-(methoxyimino)pyrrolidin-1-yl)-1-cyclopropyl-6-fluoro-4-oxo-1,4-dihydro[1,8]naphthyridine-3-carboxylic acid (LB20304 (

Author(s): Hong, CY; Kim, YK; Chang, JH; et al.

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Author(s): Kamal, A; Srinivas, O; Ramulu, P; et al.

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Author(s): KIKUGAWA, K; ICHINO, M

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Inventor/Assignee: KIM BC

.9 Title: 7025894 Patent Number: JP 7025894

Inventor/Assignee: KOBAYASHI G

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Author(s): KROW, GR

Source: TETRAHEDRON Volume: 37 Issue: 7 Pages: 1283-1307 DOI: 10.1016/S0040-4020(01)92445-7 Published: 1981

.12 Title: Design and synthesis of novel DNA interstrand cross-linking agents: C2-linked pyrrolo[2,1-c][1,4]benzodiazepine polyamide conjugates

Author(s): Kumar, R; Lown, JW

Source: HETEROCYCLIC COMMUNICATIONS Volume: 8 Issue: 2 Pages: 115-122 Published: 2002

.13 Title: 0218336 Patent Number: WO 0218336

Inventor/Assignee: LEE DC

.14 Title: 80164683 Patent Number: JP 80164683

Inventor/Assignee: NINOMIYA K

.15 Title: CHEMISTRY OF THE PYRROLO[3,4-C]PYRIDO[2,3-D]PYRIMIDINE SYSTEM - SYNTHESIS OF 6,7-DIHYDROPYRROLO[3,4-C]PYRIDO[2,3-D]PYRIMIDINES, A NOVEL RING-SYSTEM WITH POTENTIAL BIOLOGICAL INTEREST

Author(s): SU, TL; WATANABE, KA

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Author(s): TAYLOR, EC; AHMED, Z; ROBKE, DJ; et al.

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Author(s): TAYLOR, EC; FLETCHER, SR; MCCARTHY, C; et al.

Source: JOURNAL OF ORGANIC CHEMISTRY Volume: 53 Issue: 26 Pages: 6118-6120 DOI: 10.1021/jo00261a028 Published: DEC 23 1988

EFFICIENT UNCATALYZED CONVERSION OF PRIMARY AND SECONDARY THIOAMIDES INTO 1-SUBSTITUTED, 5-SUBSTITUTED, 1,5-DISUBSTITUTED AND ANNULATED TETRAZOLES

El-Ahl, AAS (El-Ahl, Abdel-Aziz S.)[1,2] ; Amer, FA (Amer, Fatty A.)[2] ; Elbeheery, AH (Elbeheery, Akram H.)[2]

Abstract

Unprecedented high-yield simple and mild conversion of primary aliphatic and aromatic thioamides into 5-substituted tetrazoles on treatment with a combination of tetrachlorosilane and sodium azide in refluxing acetonitrile has been achieved. Secondary acyclic, cyclic, and heterocyclic thioamides could also be transformed in high yields into 1-substituted, 1,5-disubstituted, or annulated tetrazoles under the same reaction condition.

Accession Number: WOS:000299727600010

Author Keywords: Tetrachlorosilane; sodium azide; thioamides; tetrazoles

KeyWords Plus: II RECEPTOR ANTAGONISTS; SODIUM-AZIDE; TRIMETHYLSILYL AZIDE; 2+3 CYCLOADDITION; PRIMARY AMIDES; NITRILES; 1H-TETRAZOLES; DERIVATIVES; ACID; CHEMISTRY

Source: PHOSPHORUS SULFUR AND SILICON AND THE RELATED ELEMENTS Volume: 186 Issue: 11 Pages: 2226-2235 DOI: 10.1080/10426507.2011.586385 Published: 2011

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Publisher: TAYLOR & FRANCIS LTD, 4 PARK SQUARE, MILTON PARK, ABINGDON OX14 4RN, OXON, ENGLAND

Web of Science Categories: Chemistry, Inorganic & Nuclear; Chemistry, Organic

Research Areas: Chemistry

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Author(s): Artamonova, TV; Zhivich, AB; Dubinskii, MY; et al.

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2. Title: Efficient syntheses of 5-aminoalkyl-1H-tetrazoles and of polyamines incorporating tetrazole rings

Author(s): Athanassopoulos, CM; Garnelis, T; Vahliotis, D; et al.

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Author(s): Aureggi, V.; Sedelmeier, G.

Source: Angew. Chem. Volume: 119 Pages: 8592 DOI: 10.1002/ange.200701045 Published: 2007

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Author(s): Aureggi, Valentina; Sedelmeier, Gottfried

Source: ANGEWANDTE CHEMIE-INTERNATIONAL EDITION Volume: 46 Issue: 44 Pages: 8440-8444 DOI: 10.1002/anie.200701045 Published: 2007

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Author(s): BENSON, FR

Source: CHEMICAL REVIEWS Volume: 41 Issue: 1 Pages: 1-61 DOI: 10.1021/cr60128a001 Published: 1947

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Author(s): Biot, C; Bauer, H; Schirmer, RH; et al.

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Author(s): BOIVIN, J; HUSINEC, S; ZARD, SZ

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Author(s): Booth, B. L.; Amer, M. I. K.

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Author(s): BURGER, H; MORITZ, P

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Author(s): Butler, R. N.

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Author(s): Marckwald, W; Chain, M

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Author(s): Das, Biswanath; Reddy, Cheruku Ravindra; Kumar, Duddukuri Nandan; et al.

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Author(s): Demko, ZP; Sharpless, KB

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Author(s): Demko, ZP; Sharpless, KB

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Author(s): ElAhl, AAS; Elmorsy, SS; Elbeheery, AH; et al.

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Author(s): ELAHL, AAS; ELMORSY, SS; SOLIMAN, H; et al.

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Author(s): FALLON, FG; HERBST, RM

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Author(s): Frija, LMT; Khmelinskii, IV; Cristiano, MLS

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Author(s): Nasrollahzadeh, Mahmoud; Bayat, Yadollah; Habibi, Davood; et al.

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Author(s): Herr, RJ

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Author(s): Jursic, BS; LeBlanc, BW

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Author(s): Kennedy, Lawrence J.

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Author(s): KOLDOBSKII, GI; OSTROVSKII, VA

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Author(s): Lang, Leiming; Li, Baojun; Liu, Wei; et al.

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Author(s): LEHNHOFF, S; UGI, I

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Author(s): McMurray, JS; Khabashesku, O; Birtwistle, JS; et al.

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Author(s): Rao, Korrapati V. V. Prasada; Dandala, Ramesh; Handa, Vijay K.; et al.

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Author(s): ROBERTS, CW; FANTA, GF; MARTIN, JD

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Author(s): Shiota, T; Yamamori, T; Sakai, K; et al.

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Author(s): Singh, H; Chawla, A S; Kapoor, V K; et al.

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Inventor/Assignee: Su, W.; Hong, Z.

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Author(s): SUZUKI, H; HWANG, YS; NAKAYA, C; et al.

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Author(s): UEYAMA, N; YANAGISAWA, T; KAWAI, T; et al.

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Author(s): Venkateshwarlu, G.; Rajanna, K. C.; Saiprakash, P. K.

Source: SYNTHETIC COMMUNICATIONS Volume: 39 Issue: 3 Pages: 426-432 DOI: 10.1080/00397910802378381 Published: 2009

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Inventor/Assignee: Waddington, H.R.J.; Duffin, G.F.; Kendall, J.D.

Source: Brit. Pat. Published: 1958

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Inventor/Assignee: Wiberg, W.; Michaud, H.

Source: German Patent Published: 1957

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Author(s): WITTENBERGER, SJ; DONNER, BG

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Author(s): Yella, Ramesh; Khatun, Nilufa; Rout, Saroj Kumar; et al.

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Author(s): Zhu, Yizhong; Ren, Yiming; Cai, Chun

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Author(s): Zimmerman, D. M.; Olofson, R. A.

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New, Efficient Synthesis of -Chloroketones Using SiCl4/Urea-Hydrogen Peroxide or SiCl4/Iodosylbenzene Reagent Systems

El-Ahl, AAS (El-Ahl, Abdel Aziz S.)[1]; Elbeheery, AH (Elbeheery, Akram H.)[2];

Amer, FA (Amer, Fathy A.)[2]

Abstract

[image omitted] Alkyl aryl ketones on treatment with SiCl4/urea-hydrogen peroxide (UHP) or SiCl4/iodosylbenzne reagent systems afforded -chloroketones in exclllent yields, while ketones with higher enol content provide exclusively ,-dichloroketones under exceedingly mild conditions. The reaction proceeds via the initial formation of silyl enol ethers. A polarized chlorine intermediate that resulted from the coordination of SiCl4 with the in situ formed trichlorosilyl hypochlorite Cl3SiOCl is thought to be the active chlorinating agent.

Author Keywords: -Chloroketones; iodosylbenzene; silyl peroxides; tetrachlorosilane (TCS); urea-hydrogen peroxide (UHP)

KeyWords Plus: ALPHA-CHLOROKETONES; CARBONYL-COMPOUNDS; CHLORINATION; CONVENIENT; CHLORIDE; KETONES; DERIVATIVES; COMPLEX

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Source: SYNTHETIC COMMUNICATIONS Volume: 41 Issue: 10 Pages: 1508-1513 Article

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Publisher: TAYLOR & FRANCIS INC, 325 CHESTNUT ST, SUITE 800, PHILADELPHIA, PA 19106 USA

Web of Science Categories: Chemistry, Organic

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Synthesis of New 2-Naphthyl Ethers and Their Protective Activities against DNA Damage Induced by Bleomycin-Iron

Abdel-Wahab, BF (Abdel-Wahab, Bakr F.)[1]; El-Ahl, AAS (El-Ahl, Abdel-Azlz S.)[2]; Badria, FA (Badria, Farid A.)[3]

Abstract

The reaction of 2-naphthaloxyacetic acid with thiosemicarbazide in the presence of phosphoryl chloride, followed by treatment with phenacylbromides, led to the formation of imidazo[2,1-b][1,3,41thiadiazoles 3a-c. 2-(Naphthalen-3-yloxy)acetohydrazide 4 on treatment with ethyl 2-(2-arylhydrazono)-3-oxobutanoates (5a-C), 2-methoxymethylene)malononitrile, or ethyl 2-cyano-3,3-bis(methylthio)acryl ate led to the formation of substituted pyrazoles 6-8. The reaction of the hydrazide 4 with hydrazonoyl chlorides 9a-c and 1,2,4,5-benzene tetracarboxylic- 1,2:4,5-dianhydride produced bis-diazo compounds 10a-c and dimide 11 respectively. All new compounds were tested for their protective activity against DNA damage induced by bleomycin-iron complex. Compound 2 showed the greatest protection against DNA damage, thus diminishing chromogen formation between the damaged DNA and thiobarbituric acid.

Source: CHEMICAL & PHARMACEUTICAL BULLETIN Volume: 57 Issue: 12 Pages: 1348-1351 Published: DEC 2009

Author Keywords: 2-naphthaloxyacetic acids; imidazo[2,1-b]-1,3,4-thiadiazole; pyrazole; hydrazonoyl chloride; 1,3,4-thiadiazole; DNA . bleomycin-iron complex

KeyWords Plus: 1,3,4-OXADIAZOLE DERIVATIVES; ANTIMICROBIAL ACTIVITY; AGENTS; ALPHA; AROYLHYDRAZINES; ANTICONVULSANT

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Web of Science Categories: Chemistry, Medicinal; Chemistry, Multidisciplinary; Pharmacology & Pharmacy

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A new convenient procedure for the thionation of carbonyl compounds utilizing tetrachlorosilane-sodium sulfide

Salama, TA (Salama, Tarek A.)[1,2]; El-Ahl, AAS (El-Ahl, Abdel-Aziz S.)[2]; Elmorsy, SS (Elmorsy, Saad S.)[2]; Khalil, AGM (Khalil, Abdel-Galil M.)[2]; Ismail, MA (Ismail, Mohamed A.)[2,3]

Abstract

A combination of tetrachlorosilane (TCS) and sodium sulfide in acetonitrile is found to be an efficient thionating reagent for aromatic aldehydes in the absence of catalysis to give the corresponding thioaldehydes as trimers in good yields. Under cobalt(II) chloride catalysis, alpha,beta-unsaturated ketones react with TCS-Na(2)S to give the respective disulfides in good yields via the intermediacy of beta-mercaptoketones at ambient temperature. (C) 2009 Elsevier Ltd. All rights reserved.

Author Keywords: Tetrachlorosilane-sodium sulfide; Thionation; Trithioaldehydes; beta-Mercaptoketones; Synthesis

KeyWords Plus: PHOSPHORUS PENTASULFIDE; ORGANOPHOSPHORUS COMPOUNDS; REAGENT COMBINATION; 3H-1,2-DITHIOLE-3-THIONES; HEXAMETHYLDISILOXANE; THIOKETONES; SYSTEM

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Book Editor(s): Rappoport, Z; Apeloig, Y

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Author(s): Curphey, TJ

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Author(s): Curphey, TJ

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Author(s): MUKAIYAMA, T; OHNO, T; NISHIMURA, T; et al.

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Author(s): Pathak, Uma; Pandey, Lokesh Kumar; Tank, Rekha

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Author(s): PEDERSEN, BS; SCHEIBYE, S; NILSSON, NH; et al.

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Author(s): PEDERSEN, BS; LAWESSON, SO

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Author(s): Polshettiwar, V

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