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RESEARCH ARTICLE

NOVEL SYNTHESIS OF SUBSTITUTED P- ANISIDE PYRIDOPYRIMIDINE DICARBONITRILE

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ABSTRACT

A mixture of 8-(3-bromo-4,5-dimethoxyphenyl)-6-(nitrophenyl-4-imino-2-(methylsulfanyl)-4*H*-pyrido(1,2-*a*)pyrimidine-3,9-dicarbonitrile with P-Anisidine was refluxed in presence of K_2CO_3 (1-2) pinch in DMF as solvent for about 6-7 hrs. to get 2-p-anisidino derivatives of pyrido pyrimidine (yield 56%).The structures for the synthesized compounds are assigned on the basis of IR, ^{1}HNMR and Mass spectral studies.

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INTRODUCTION

Heterocyclic compounds constitute the largest, most varied family of organic compounds and are very widely distributed in nature. They play a vital role in the metabolism of all the living cells. The study of heterocycles is of great interest both from the theoretical as well as practical stand point. A heterocyclic compound is one which possesses acyclic structure at least two different kinds of atoms in the ring. The most common types contain largely carbon atom, nitrogen, oxygen and sulphur but many other elements, including even bromine, chlorine can also be present. The heterocyclic containing the less common atoms have been subject to much investigation in recent years. Heterocyclic chemistry and medicinal chemistry share a venerable common history. Many of the founders of heterocyclic systems had an intense interest not only in molecules from nature but also in the effects of synthetic compounds on living systems. The current interest in the creation of large, searchable libraries of organic compounds has captured the imagination of organic chemists and the drug discovery community. In numerous laboratories, the efforts are focused on the introduction of chemical diversity, which have been recently reviewed and pharmacologically interesting compounds have been identified from libraries of widely different compositions[1-5].

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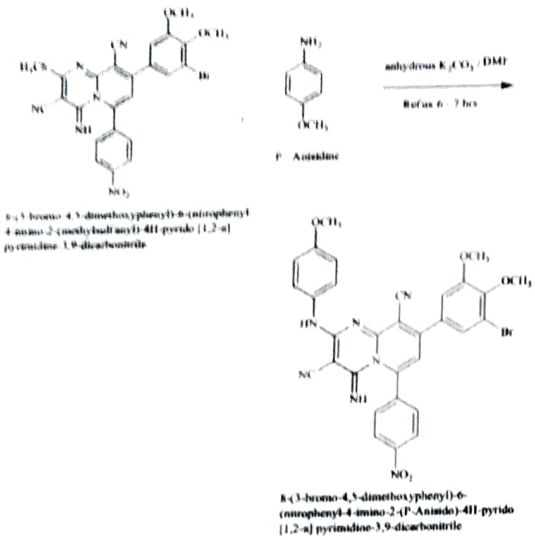
Today, the chief sources of agents for the cure, the improvement or the prevention of diseases are the heterocyclic compounds, natural or synthetic. Such agents have their origin in a number of ways (a) from naturally occurring materials of both plant and animal origin, and (b) from the isolation of organic compounds synthesized in laboratory whose structures are closely related to those of naturally occurring compounds. The heterocyclic compound containingNitrogen, Oxygen, Sulphurpossesses best pharmacological activity. Compound like pyridine, Pyrimidine, triazine exhibited interesting pharmacological properties among them some fused heterocyclic compound containing pyridine possess remarkable antitubercular activity[6]. Similarly,the fused heterocyclic compound containing pyrido pyrimidine and its derivatives possesses better antibacterial activity against Gram positive & Gram negative species[7]. From many years researchers have been highly interested in the chemistry of heterocyclic compound and its derivatives with their excepted biological activity[8-11].The heterocyclic compound containing cyanopyridine &cyanopyrane derivatives possesses versatile biological activity like antimicrobial[12], antitubercular[13], antiflammatory[14], antitumor[15], antiviral[16]& antifungal[17] In view of the literature survey, the present work we thought worthwhile to synthesize the bicyclic heterocyclic compound which containing pyrido pyrimidine nucleus & its 2-substituted derivatives.

Experimental Section: All melting points were determined in open capillary tube and were uncorrected.



Yield: 58%, M.P : 288^{0}C,

IR spectra were recorded with potassium bromide pellets technique, ^{1}H NMR spectra were recorded on AVANCE 300 MHz Spectrometer in DMSO using TMS as internal standard. Mass spectra were recorded on a FT VG-7070 H Mass Spectrometer using EI technique at 70 eV. All the reactions were monitored by thin layer chromatography.

MATERIALS AND METHODS

Synthesis of Synthesis of 8-(3-bromo-4,5-dimethoxyphenyl)-6-(nitrophenyl-4-imino-2-(P-Anisido)-4H-pyrido (1,2-a) pyrimidine-3,9-dicarbonitrile. In the present work, we report synthesis of A mixture of 1gm (0.0017m moles) 8-(3-bromo-4,5-dimethoxyphenyl)-6-(nitrophenyl-4-imino-2-(methylsulfanyl)- 4*H*-pyrido (1,2-*a*) pyrimidine-3,9-dicarbonitrile is refluxed with 0.21 gm (0.0017m moles) P-anisidine was refluxed in presence of K_2CO_3& DMF as a solvent for about 6-7 hours reaction mixture was monitored by TLC & cooled it then poured in ice cold water, solid get separate out. The Purity of compound was checked by TLC.The compound observed on TLC as single spot in benzene. Structures to these compounds are assigned on the basis of elemental analysis and spectral data.

Reaction: IR:(KBr/cm^{-1}) : 3440 (=NH), 1620 (C=N), 1520& 1345 (-NO_2, asymmetric and symmetric stretching), EI-MS: (m/z:RA%) :653 (M+1), Elemental analysis : $C_{31}H_{22}BrN_7O_5$Calculated: (%) C 57.07, H 3.40, N 15.03, O 12.26, Br12.25 Found (%) : C 57.02, H 3.35, N 15.00, O 12.22, Br 12.21

Results and Discussion: Literature survey reveals that, many work was published on pyrimido pyrimidine heterocycles compound, Heterocycles containing pyrimido pyridine derivatives exhibited remarkable anti-inflamatory, antiallergic, antitumor and antihypertensive activity.In the present work. We report the synthesis of pyrido pyrimidine and it's 2-anilino derivatives.

Conclusion

In conclusion a facile one pot synthesis has been developed for the title compounds using readily available starting materials. Thus, there is a network of reaction equilibria which all finally flow into an irreversible step yielding the product. In contrast to multi step synthesis, one pot reactions need minimal work and they have often quantitative yields.

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