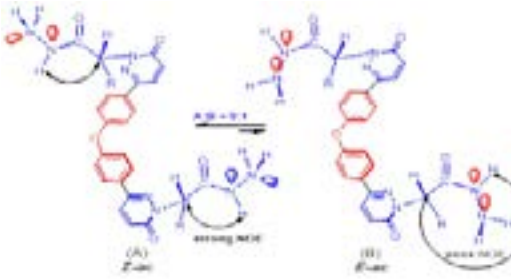
conferenceseries.com

Amariucai-Mantu Dorina et al., Organic Chem Curr Res 2018, Volume:7
DOI: 10.4172/2161-0401-C1-022

Acetylhydrazine Bis-pyridazinones: Synthesis and stereochemistry

Amariucai-Mantu Dorina, Vasilichia Antoci and **Ionel I Mangalagiu**
Alexandru Ioan Cuza University of Iasi, Romania

Over the last decades, pyridazine derivatives are considered "privileged structures" due to their important applications from pharmacological, industrial, and synthetic points of view. On the other hand, pyridazinones derivatives were found to possess a large range of biological activities, including anticancer, anticonvulsant, antimicrobial, analgesic, anti-inflammatory, antihypertensive, etc. Morover, some N-unsubstituted and N-substituted pyridazineones are already drugs in therapy. As part of our ongoing research in the field of azaheterocycles derivatives, we present herein the synthesis and stereochemical studies of some acetylhydrazines derived from bis-pyridazinones. The synthesis is straight and efficient, involving only two steps: the N-alkylation of bis-pyridazinones with 2–bromoalkyl esters followed by a subsequent treatment with hydrazine, the desired acetylhydrazines bis-pyridazinones being obtained. The NMR studies (^{1}H, ^{13}C, 2D HMBC) at room temperature reveal a conformational equilibrium of acetylhydrazine bis-pyridazinones, the obtained compounds being a mixture of Z-sc (around 90%) and E-ac (around10%) conformers. The noediff 1D experiments prove unambiguously the above considerations, only the major isomer *Z-sc* shows a strong NOE between the hydrazidic NH and the –CH-R group. In order to overcome the rotational restriction of acetylhydrazine bis-pyridazinones and to find the coalescence temperature, temperature dependence ^{1}H NMR study concerning conformational equilibrium has been performed, indicating the presence of a single stereoisomer at temperatures higher to 80 °C, the Z-ac conformer.



Recent publications

1. Mantu D, Antoci V, Nicolescu A, Deleanu C, Vasilache V, et al. (2017) Synthesis, stereochemical studies and antimycobacterial activity of new acetylhydrazines pyridazinone. Curr. Org. Synth. 14(10):112-119.
2. Mantu D, Antoci V, Moldoveanu C, Zbancioc Ghe and Mangalagiu I I (2016) Hybrid imidazole (benzimidazole)/ pyridine (quinoline) derivatives and evaluation of their anticancer and antimycobacterial activity. J. Enzym. Inh. Med. Ch. 31(2):96-103.
3. Tucaliuc R, Cotea V, Niculaua M, Tuchilus C, Mantu D, et al. (2013) New pyridazine–fluorine derivatives: synthesis. Chemistry and Biological Activity. Part II, Eur. J. Med. Chem. 67:367-372.
4. Bejan V, Mantu D and Mangalagiu I I (2012) Ultrasound and microwave assisted synthesis of isoindolo-1,2-diazine: a comparative study. Ultrason. Sonochem. 19:999-1002.
5. Mantu D, Luca M C, Moldoveanu C, Zbancioc Ghe and Mangalagiu I I (2010) Synthesis and antituberculosis activity of some new pyridazine derivatives. Part II, Eur. J. Med. Chem. 45:5164-5168.

Biography

Dorina Amariucai-Mantu is a Lecturer at "Alexandru Ioan Cuza" University of Iasi, Romania. She has completed her PhD and Postdoctoral studies at the same university. She has published more than 25 papers in reputed journals and has been serving in the Editorial Board of journals of repute.

dorinaiasi@uaic.ro