

FACULDADE • DE • CIÉNCIAS • UNIVERSIDADE • DE • LISBOA

BOOK OF ABSTRACTS

6SPJ-OCS
Faculty of Sciences, University of Lisbon

18-20 July 2012

PORTUGAL

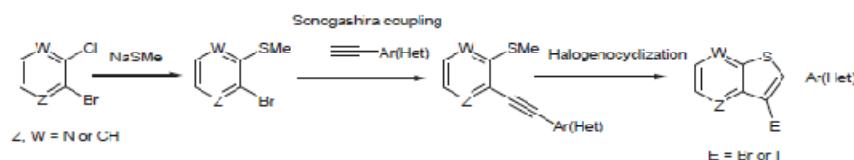
SYNTHESIS OF 3-HALO-2-(HETERO)ARYLTHIENOPYRIDINES THROUGH A THREE-STEP METHODOLOGY FROM 2,3-DIHALOPYRIDINES, METHANETHIOLATE, (HETERO)ARYLALKYNES AND ELECTROPHILES.

Acathe Begouin, Daniela Peixoto and Maria-João R. P. Queiroz

Centro de Química (UI686), Universidade do Minho, Campus de Gualtar 4710-057 Braga, Portugal, a.begouin@quimica.uminho.pt

Thienopyndine derivatives have been shown to exhibit a large variety of biological activities, thus attracting considerable attention. For some years now, our research group has been interested in the synthesis of differently functionalized thieno[3,2-*b*]pyridines susceptible to present antitumoral^[1-4] and antiangiogenic activities.

Herein, we describe the synthesis of 3-halo-2-(hetero)arylthienopyridines by a three-step methodology using *ortho*-bromochloropyridines as the starting materials. The nucleophilic substitution of the chlorine atom of the pyridine ring by SMe gave the corresponding *ortho*-bromo(methylthio)pyridines that were coupled with different (hetero)arylkynes. Then, the halogenocyclization of the Sonogashira coupling products successfully afforded the expected 3-halo-2-(hetero)arylthienopyridines.



The synthesized halogenated thienopyridines will allow further functionalization by metal-catalyzed coupling reactions.

Acknowledgements: Foundation for the Science and Technology (FCT–Portugal) for financial support through the Portuguese NMR network (Druker 400 Avance III-Univ. Minho), FCT and FEDER (European Fund for Regional Development)-COMPETE/QREN/EU for financial support through the research centre PEst-C/QUI/UI686/2011, the research project PTDC/QUI-QUI/111060/2009 and the post doctoral grant of Agathe Begouin SFRH/BPD/36753/2007.

- [1] M.-J.R.P Queiroz, R.C.Calhelha, L. A. Vale-Silva, E. Pinto, R.T. Lima, M.H. Vasconcelos, *Eur. J. Med. Chem.* **2010**, *45*, 5628-5634.
- [2] M.-J.R.P Queiroz, R.C.Calhelha, L. A. Vale-Silva, E. Pinto, M. S.-J. Nascimento, *Eur. J. Med. Chem.* **2010**, *45*, 5732-5738
- [3] M.-J.R.P Queiroz, R.C.Calhelha, L. A. Vale-Silva, E. Pinto, G. M. Almeida, M. H. Vasconcelos, *Eur. J. Med. Chem.* **2011**, *46*, 236-240.
- [4] R.M.V. Abreu, I.C.F.R. Ferreira, R.C. Calhelha, R.T. Lima, M. H. Vasconcelos, F. Adega, R. Chaves, M.-J.R.P. Queiroz, *Eur. J. Med. Chem.* **2011**, *46*, 5800-5806.