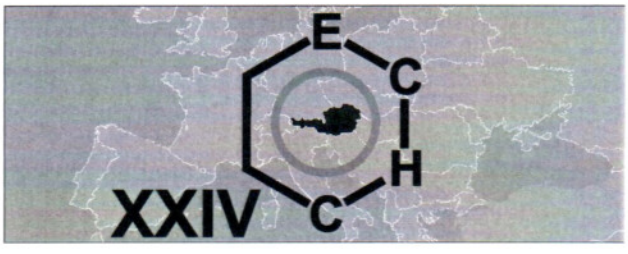
XXIVth European Colloquium on Heterocyclic Chemistry



August 23rd – 27th, 2010

Institute of Applied Synthetic Chemistry
Vienna University of Technology

Austria

http://www.echc2010.net/

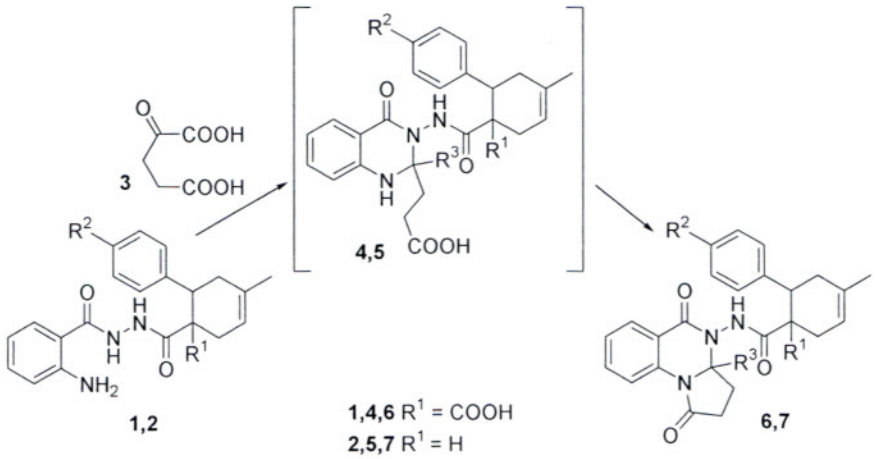
SYNTHESIS OF PYRROLO[1,2-*a*]QUINAZOLINE DERIVATIVES

Daina Zicane, Irisa Ravina, Zenta Tetere, and Inese Rijkure

Riga Technical University, 14/24 Azenes str., Riga LV-1007, Latvia

Pyrroloquinazolines are prevalent substructures in naturally occurring alkaloids [1] and synthetic molecules displaying biological activities [2]. In the context of drug discovery, those scaffolds have already shown their potential for example as analgetics [3] and neuroleptics [4]. Consequently, the development of efficient ways to prepare these compounds constitutes an active and essential area of research.

To obtain new pyrroloquinazoline rings, we have studied the reaction of 2-oxoglutaric acid (**3**) with a number of hydrazides of 2-aminobenzoic acid (**1, 2**).



R^2 = a) Ph, b) C_6H_4-F(p), c) C_6H_4-Cl(p), d) C_6H_4-Br(p), e) C_6H_4-NO_2(p)
R^3 = COOH

The starting hydrazides were synthesized from isatoic anhydride and the corresponding monohydrazides of cyclohexenedicarboxylic acids [5]. Treatment of the compounds **1a-e** with 2-oxoglutaric acid (**3**) in the refluxing acetic acid was found to give cyclohexenecarbonylaminopyrrolo[1,2-*a*]quinazoline carboxylic acids **6a-e** in law yields. Apparently, compounds **6a-e** were formed through the intermediate adducts **4** by means of intramolecular acylation of the amino group with the carboxyl. After a decarboxylation of hydrazides **1a-e** in pyridine, the pyrroloquinazolines **7a-e** were obtained in high yields as a mixture of diastereomers 1:1 (**7b-e**) and 2:1 (**7a**).

[1] S.B. Mhaske, N.P. Argade, Tetrahedron, 2006, 62, 9787.
[2] F. Dumitrascu, E. Georgescu, M.R. Caira, F. Georgescu, M. Popa, B. Dragihici, D.G. Dumitrescu, Synlett, 2009, 20, 336.
[3] I.Rioja, M.C. Tuencio, A. Ubeda, P. Molina, A. Tarraga, A.G. Tijero, M.J. Alcaraz, Eur. J. Pharm., 2002, 434, 3, 177.
[4] S. Chacklamannil, Ho-Sam Ahn, Yan Xiá, D.Doller, C. Foster, Curr. Med. Chem., 2003, 1, 37.
[5] D.R. Zicane, I.T. Ravina, I.A. Rijkure, Z.F. Tetere, E.Yu. Gudriniece and U.O. Kalejs. Zh. Org. Khim., 2000, 36, 521.