

Novel green and more efficient reaction for the synthesis of aromatic hydrazides

L.Galeazzi^{1,2*}, J.Torres¹ and M. Brovetto²

1) Área de Química Inorgánica, DEC, Facultad de Química, UDELAR, Uruguay

2) Laboratorio de Química Orgánica, DQO, Facultad de Química, UDELAR, Uruguay

*e-mail: lgaleazzi@fq.edu.uy

Keywords: Aromatic hydrazides, lanthanide coordination compounds.

ABSTRACT

Development of new lanthanide-based sensors depends on the rational design of ligands containing multiple coordination sites and planar π -delocalized systems for light reception.^[1] In this work we present a novel, one-step reaction for the synthesis of aromatic hydrazides, precursors in the synthesis of the final organic ligands designed for the coordination with the lanthanide ions. The synthetic strategy implicates the reaction between a naphthoic carboxylic acid (among others) and hydrazine monohydrate, using 1,1'-carbonyldiimidazole (CDI) as coupling agent and THF as solvent.^[2] We also add 4-dimethylaminopyridine (DMAP) and *N,N'*-diisopropylethylamine (DIPEA) as bases (**Figure 1**). The reaction is completed at room temperature overnight. This is a non-reported alternative to the classical two-step approach, which includes the preparation of the desired hydrazide from its corresponding carboxylic acid; which is first esterified and subsequently treated with hydrazine monohydrate, taking up to 24 hours of reflux conditions for each reaction.^[3]

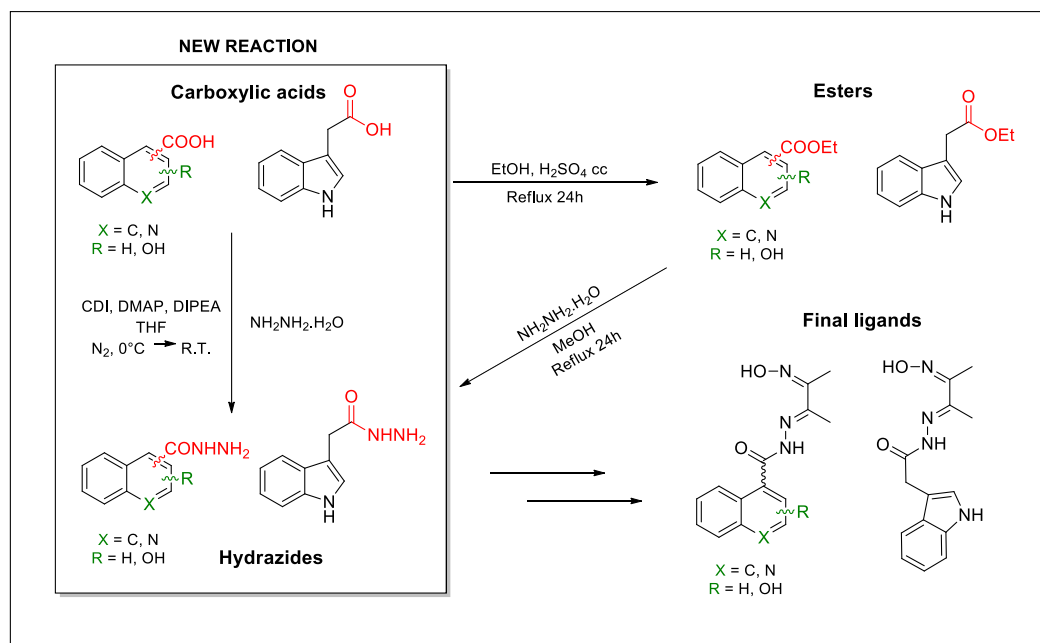


Figure 1: New reaction for the synthesis of hydrazides and classical two-step approach.

ACKNOWLEDGEMENTS

CSIC and PEDECIBA for financial support, ANII for scholarship POS_FCE_2020_1_1009184.

REFERENCES

- [1] WEI, Chen, et al. Advances in luminescent lanthanide complexes and applications. *Science China Technological Sciences*, 2018, vol. 61, no 9, p. 1265-1285.
- [2] LI, Ziqiang, et al. Preliminary SAR and biological evaluation of antitubercular triazolothiadiazine derivatives against drug-susceptible and drug-resistant *Mtb* strains. *Bioorganic & medicinal chemistry*, 2017, vol. 25, no 1, p. 213-220.
- [3] CHEN, Yin, et al. Synthesis and evaluation of a series of 2-substituted-5-thiopropylpiperazine (piperidine)-1, 3, 4-oxadiazoles derivatives as atypical antipsychotics. *PLoS One*, 2012, vol. 7, no 4, p. e35186.