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THE SYNTHESIS OF 3-AMINO-1-HETARYLFLUORENE DERIVATIVES AND THEIR UNPRECEDENTED SIDE PRODUCTS

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Aminofluorene and its derivatives have proved to be one of the most widely studied candidates among in cancer research. They have also found its applications as efficient ds-RNA fluorescent probe. Most common approach for the synthesis of aminofluorene is based on the hydrogenation of corresponding nitro/nitrile fluorenes as starting material. However, to the best of our knowledge, decyanization reaction has never been used to obtain 1-hetarylsubstituted-3-aminofluorene. Furthermore, the desired compounds are also difficult to afford through conventional protocols such Suzuki coupling, functionalizing of bromide substituted fluorene etc. The decyanization reaction provides not only the removal of cyano groups from the structure but also unprecedented side products because of harsh reaction conditions, such as the alkylated 1-hetaryl-3-aminofluorene derivatives. In this study, on a facile protocol to obtain 1-hetaryl-3-aminofluorene and its side products besides the catalytic reduction of various corresponding nitro-substituted fluorene compounds which are difficult to synthesize by other methods. Furthermore, a proposed mechanism has been outlined for the achieved novel type of aminofluorene products by means of XRD, Mass and NMR spectroscopy.

Recent Publications

1. Yalcin Ergin et al. (2017) Novel fluorene/fluorenone DNA and RNA binders as efficient non-toxic ds-RNA selective fluorescent probes. *Tetrahedron*. 74(5):535-543.
2. B Sahoo et al. (2017) Biomass-derived catalysts for selective hydrogenation of nitroarenes. *ChemSusChem*. 10(15):3035-3039.
3. Formenti Dario et al. (2017) Co-based heterogeneous catalysts from well-defined α -diimine complexes: discussing the role of nitrogen. *Journal of Catalysis*. 351:79-89.

Biography

Ergin Yalcin currently works at the Graduate School of Natural and Applied Sciences of Gazi University. His research interest focuses on the synthesis of novel ligands which may have interaction with biomolecules (G-Quadruplex DNA, ds-DNA, RNA etc.) that have a challenging task to identify biological important processes. He is also interested in: Ligand- DNA/RNA interaction, supramolecular chemistry and sensing of molecules.

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