Área: ORG

A synthetic exploration in Nucleophilic Aromatic Substitutions (S_NAr): Tetra-*ortho*-fluorination of azobenzenes.

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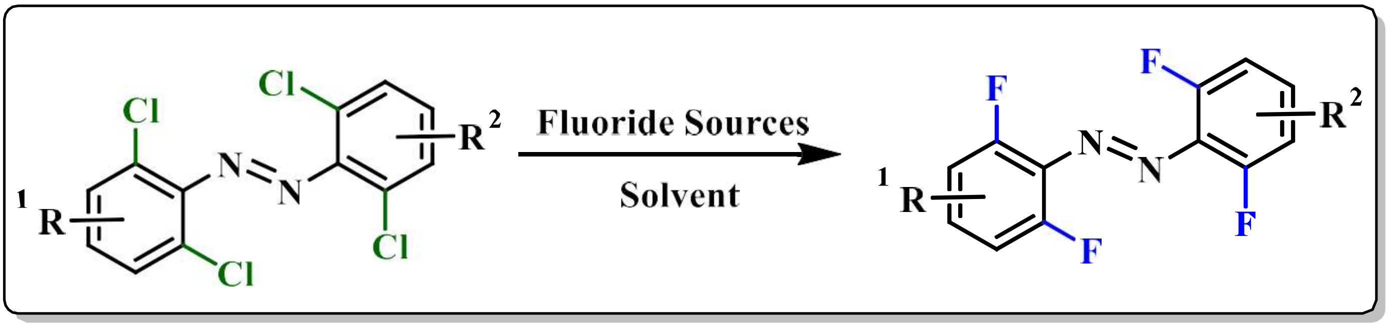
Highlights

Nucleophilic Aromatic Substitutions in azobenzenes. The new synthetic approach for tetra-*ortho*-fluoroazobenzenes introduces relies on the electron withdrawing properties of the azo group.

Resumo/Abstract

Trauner and coworkers[1] performed a tetra-*ortho*-chlorination of azobenzenes in 2016, using directed C-H activation via palladium catalysis. This introduction of four halogens in *ortho* positions to the azo group causes a red-shift of the wavenlenght required for *E-Z* isomerization and a substantial increase in the half-life time of the *Z* isomer[2]. However, the photophysical and biological properties of tetra-*ortho*-chloro and tetra-*ortho*-fluoro azobenzenes differ. Also, the main issue in synthesis of using fluoride as nucleophile is the highly hydrophilic character of this anion that causes reproducibility troubles. This project uses an approach developed by Sanford and coworkers[3] in 2021, in which fluorides hydrophobic salts are used as nucleophilic fluoride sources in S_NAr reactions. This synthesis of tetra-*ortho*-fluoro azobenzenes offers several advantages over previously described synthetic methods and will be a valuable tool for the photopharmacology community.



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