Category

Synthesis of Materials and Unnatural Products

Key words

triazoles

regioselectivity

tetrazoles

photochemistry

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Regiospecific Synthesis of *N*2-Aryl 1,2,3-Triazoles from 2,5-Disubstituted Tetrazoles via Photochemically Generated Nitrile Imine Intermediates

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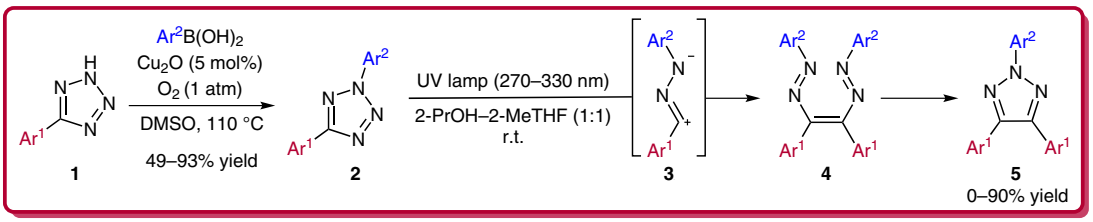
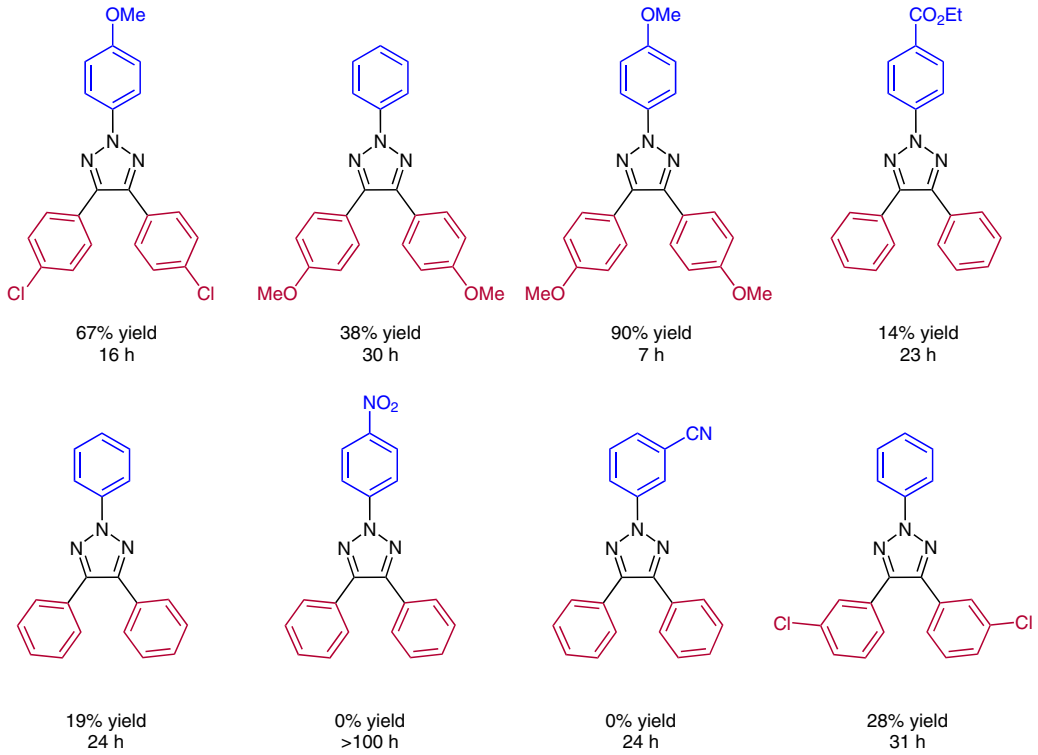
Triazole Your Tetrazoles



Selected examples of **5**:



Significance: Stewart, Harris, and Jamieson developed a one-step reaction to photochemically synthesize *N*2-aryl 1,2,3-triazoles **5** from 2,5-diaryl tetrazoles **2**. This method bypasses issues of regioselectivity by first preparing the appropriate N-arylated tetrazole, which under UV irradiation forms a nitrile imine intermediate **3** that dimerizes and rearranges to produce the appropriate *N*2-aryl 1,2,3-triazole.

Comment: Electron-donating substituents and dilute conditions led to improved yields of the triazoles, while electron-deficient *N*-aryl substituents led to poor or zero conversion. Previous studies of similar starting materials identified tetrazine as the final product, but the authors indicate that the only other compound isolated in their study was the Wanzlick dimer **4**, which can be converted into the final triazole with additional UV irradiation.

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