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Synthesis of 4-arylchalcogenyl-1*H*-pyrazoles catalyzed by copper

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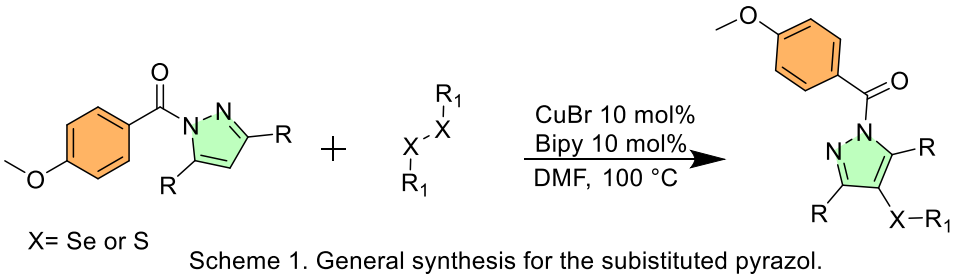
ABSTRACT

Pyrazoles represent a significant class of biologically active nitrogen compounds, showing various properties. Regardless of the number of methods for synthesizing them, looking for other mild and accessible pathways to obtain these molecules is still of interest to synthetic organic chemists. Furthermore, organoselenium and organosulfur compounds are interesting molecules also due to their biological properties and selective reactions.[1] Despite that, overcoming some limitations for the formation of C-Se bonds that require harsh reaction conditions has been our focus, using copper as an efficient catalytic system.[2] Thereby functionalizing the pyrazole nuclei with organochalcogens compounds is still an expanding area of study, obtaining new selenium/sulfur-containing pyrazoles potentially applicable for biological studies. This allowed the synthesis of 8 novel derivatives, with yields ranging from 40% to 95% (Figure 1). In addition, some work is still underway to synthesize novel compounds using different substituents in the pyrazole and organochalcogen compounds.



Scheme 1. General synthesis for the subistituted pyrazol.

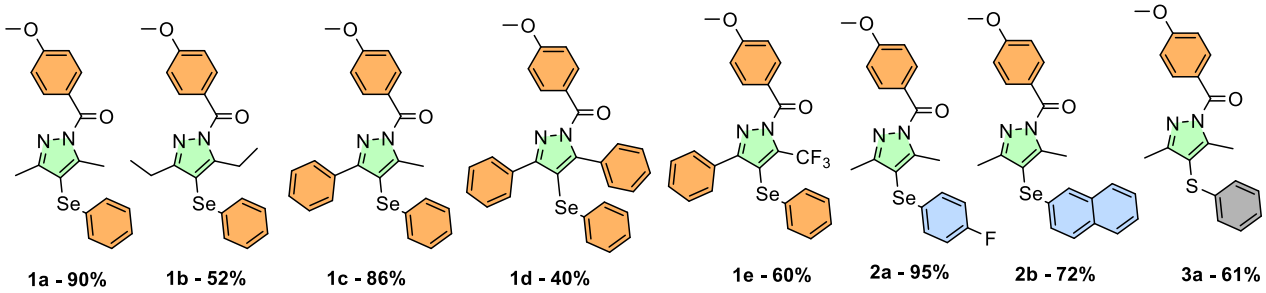


Figure 1. Obtained compounds through the synthesis.

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