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Use of the Suzuki-Miyaura coupling reaction in the synthesis of chrysin biarylic derivatives for the investigation of their neuroprotective activities in glial cells

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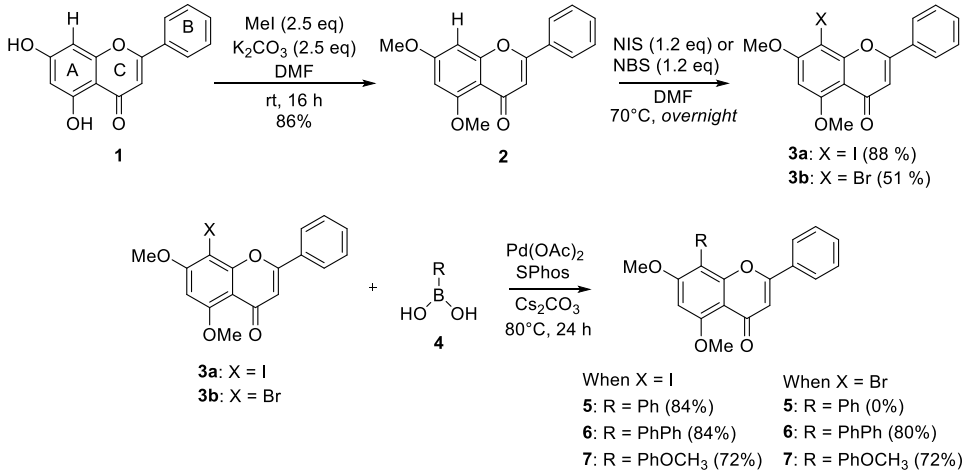
ABSTRACT

Flavonoids make up a very interesting class of molecules present in nature. Its standard three-ring skeleton structure (A, B, and C, Scheme 1, compound **1**), with small variations in this structure, provide a pletora of biological and pharmacological activities such as antibacterial, antifungal, antiparasitic, anti-Alzheimer, antidepressant. Antidiabetic, antiobesity, anti-inflammatory, antioxidant, anticancer and cardioprotective activity.[1] Due this, some chrysin biarylic derivatives were synthesized by Suzuki-Miyaura cross-coupling reaction.[2,3] Therefore, the objective of this work is to make modifications to commercially available chrysin to synthesize biarylic compounds that could optimize their pharmacological properties. Coupling compounds were obtained in satisfactory yields (72 to 84%). The halogenation of compound **2** using NIS was obtained with higher yields when compared to NBS (88% and 51%, respectively). Among the coupling products, the yields of biarylic derivatives were similar when starting from **3a** or **3b**. The products obtained in the third stage will be investigated from a biological perspective regarding their neuroprotective activities in glial cells.



Scheme 1: Synthesis of chrysin biarylic derivatives.

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