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Synthesis and *In Vitro* Studies of Chalcogenophenes Containing Quinoline.

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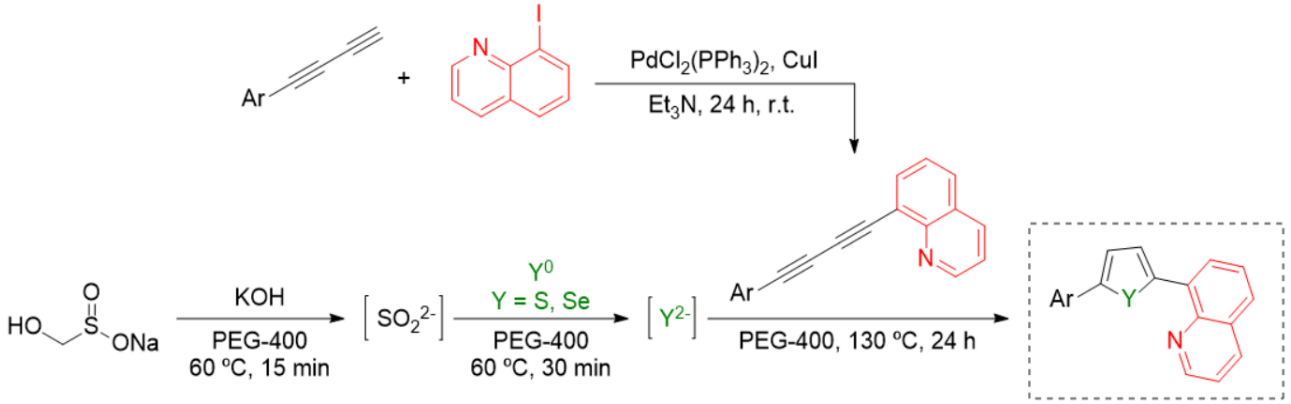
ABSTRACT

Research interest on chalcogenophenes increased in recent years due to their wide range of applications. This class of heterocycles are vastly investigated in different fields such as material science, organic chemistry and medicinal chemistry.[1,2] Considering their versatility, we designed a new class of compounds, combining thiophenes and selenophenes with quinoline, which is well known for its photophysical and biological activity. These compounds were synthesized from elemental chalcogen and novel 1,3-butadiynes, previously synthesized, containing the quinoline core using a green methodology developed by our research group, which uses PEG-400 as solvent. This method promotes the diynes cyclization utilizing Rongalite, a cheap and non-toxic reagent, that promotes the formation of the chalcogens nucleophilic species *in situ*.[3] Preliminary results indicate that the synthesized chalcogenophenes, particularly selenophenes, exhibit antiproliferative activity against the breast tumor cell line MDA-MB-231, as assessed by the MTT method.



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