**A Visible-light promoted synthesis of substituted benzo[*c*]-chromeno[4,3,2-*gh*]phenanthridine involving hetero-cross-coupling cyclization and aromatization reaction**

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**Abstract:** A visible–light–induced radical catalyzed synthetic methodology was developed for the synthesis of substituted benzo[*c*]chromeno[4,3,2-*gh*]phenanthridines starting from substituted 2-(7,8,9,10-tetrahydrobenzo[c]phenanthridine-6-yl) phenol in 1,4-dioxane as solvent (Scheme 1) and it will be presented. Derivatives of substituted benzo[c]chromeno[4,3,2-gh] phenanthridines were obtained by using the inexpensive organic dye eosin yellow as a photocatalyst in a substoichiometric amount in presence of 2×9 W white LEDs visible irradiation. A hetero cross-coupling reaction followed by aromatization is taking place in a single step without involving any metal catalyst, or dehydrogenating agent. Notably, 2-(7,8,9,10-tetrahydrobenzo[*c*]phenanthridine-6-yl) phenol derivatives can be easily prepared by multicomponent reaction of commercially available salicylaldehyde, substituted cyclohexanone, and 1-naphthylamine derivatives in a single step.



**Scheme 1.** Scope of benzo[c]chromeno[4,3,2-gh]phenanthridine derivatives

**References**

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