Recyclable Claycop/ Hydrazine Hydrate catalytic system for 1,2,3 Traizole derivative synthesis under solvents free condition

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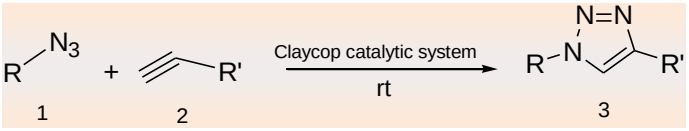
Abstract

1,2,3-triazole ring is not natural ring, but the benefits of triazole ring are increasing rapidly in last decays to involve in several applications; medical agents, pharmacological activities, in addition to polymer applications. Huisgen innovation the 1,3-dipolor cycloaddition reaction between azids and terminal alkynes have been considered as an important route to synthesis the disubstituted-1,2,3-triazole. The Huisgen work had supported the work for sharpless[2] and his co-workers to reveal a new concept that called the click chemistry with the high regioselectively and high quantitative yield providing. Sharpless introduced the copper catalyst Cu (I) as the main catalyst for the click reaction for one-pot azide-alkyne cycloaddition reaction (CuAAC) to induce the formation for disubstituted-1,2,3-triazole with the high yield production in room temperature.

Because of the contamination of The homogenous copper catalyst by final product and hardly recovering for the catalyst, the conversion for heterogeneous catalysts have been better solutions. The advantages of heterogeneous catalysts exhibit from easily separated from the reaction mixture and most of time reusing. The heterogenous catalyst system used Cu (I) with various support for copper (zeolit,silica) to introduce for click reaction, or as corporation systems with catalyst; e.g ligands and ionic liquid supported Cu (I). Nowadays the nanotechnology for catalyst is clear by Cu (0).

The short time and efficient synthesis are the objectives for all chemists. The new route of synthesis 1,2,3- traizole follows these objectives. One-pot cycloaddition reaction for azide and terminal alkyne is established to produce the 1,4- disubstituited 1,2,3-triazole by using the heterogeneous clay supported copper(II) nitrate(claycop), with hydrazine hydartate as reducing agent for Cu (II) to Cu (I). The efficiency of this route is high purities for the main products, the availability for applied by different azids and alkynes with high yields under mild conditions, in addition the simplicity for recyclable the catalyst.

Reaction scheme



References

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Biography

Hanan Elnagdy are an international research scholar in Dibrugarh university, India. She is originally from Egypt, she has a ten year experience in safety and occupational health in particular the safety precautions in chemail using and environmental applications.

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