«Click»-synthesis of 1-benzyl-4-phenyl-1*H*-1,2,3-triazole facilitated by copper(II) complex of 1-*tert* -butyl-(benzoylamino)-1*H*-tetrazole

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1*H*-1,2,3-triazoles are promising and important N-heteroaromatic compound, having tremendous application in various research fields, including synthetic organic chemistry and pharmaceutical synthesis. 1,4-Disubstituted derivatives of this compounds exhibit a wide range of biological activity: antitumor, antiviral, anti-allergic and fungicidal, thus gaining a lot of attention from medicinal chemists as a source for new potential therapeutic agents.[1,2]

The present paper we report of the implementation of copper(II) complex of 1-*tert*-butyl-5-(benzoylamino)-1*H*-tetrazole as a catalyst for Huisgen [3+2] cycloaddition synthesis of 1-benzyl-4-phenyl-1*H*-1,2,3-triazole (Fig. 1). The optimal condition of the reaction (THF as a solvent, reflux for 4 hours, aerial conditions, 5 mol.% catalyst loading) allowed us to obtain the target triazole in excellent yield – 92 %.

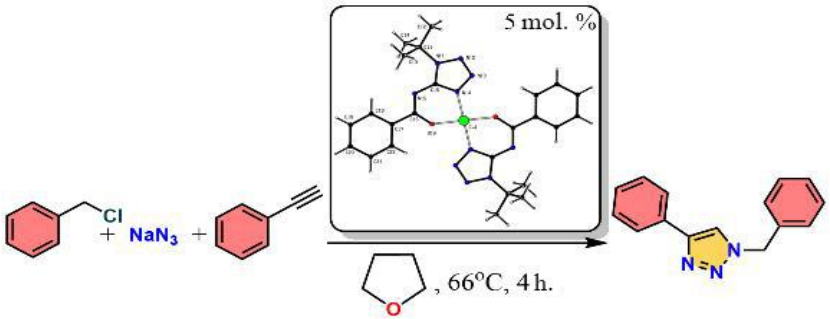

Fig. Scheme of "click"-synthesis of 1-benzyl-4-phenyl-1*H*-1,2,3-triazole

The structure of the catalyst and the target product were confirmed by IR, ^{1}H and ^{13}C NMR spectroscopy, and X-ray diffraction analysis.

References

[1] I. Sahin et al. J. Mol. Struct. (2021**)** 1232: 130042
[2] H. Hernandez-Lopez et al. ACS Omega. (2020) 5: 14061