

Catalytic activity of azido-bridged dinuclear Cu(II)-hydrazone coordination compound in green click synthesis of 1,2,3-triazoles.

Autorzy

Rahman Bikas
Marta S. Krawczyk
Tadeusz Lis

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Streszczenie

Azido bridged dinuclear Cu(II) coordination compound, $[\text{Cu}_2(\text{L})_2(\mu\text{-N}_3)_2]$ (**1**), was synthesized by the reaction of $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$, NaN_3 and tridentate NNO-donor hydrazone ligand, (*E*)-2-cyano-*N'*-(1-(pyridin-2-yl))(HL), with 2 : 2 : 3 molar ratios in methanol. The obtained compound was characterized by elemental analysis, FT-IR and UV-Vis spectroscopy, TGA analysis and its crystal structure was determined by single crystal X-ray diffraction studies. There is a good agreement between structural and spectroscopic properties of the obtained compound which indicated the ligand is coordinated to the metal ion as mononegative ligand in the iminol form. The obtained compound was used as catalyst in green click synthesis of β -hydroxy-1,2,3-triazoles through azide-alkyne-epoxide cycloaddition reaction. The catalytic reactions were carried out in water as a green solvent and the effect of temperature on the activity and selectivity of the catalytic system was investigated. The catalytic studies indicated that azido-bridged Cu(II)-hydrazone coordination compound is an active catalyst for green synthesis of β -hydroxy-1,2,3-triazoles in mild condition.

Słowa kluczowe

catalyst, clic reaction, copper(II) coordination compound, crystal structure, 1,2,3-triazoles

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