

Download Azide Click Reaction

The azide-alkyne Huisgen cycloaddition is a 1,3-dipolar cycloaddition between an azide and a terminal or internal alkyne to give a 1,2,3-triazole. Rolf Huisgen [1] was the first to understand the scope of this organic reaction. As one of the best click reactions to date, the copper-catalyzed azide-alkyne cycloaddition features an enormous rate acceleration of 10^7 to 10^8 compared to the uncatalyzed 1,3-dipolar cycloaddition. It succeeds over a broad temperature range, is insensitive to aqueous conditions and a pH range over 4 to 12, and tolerates a broad range of functional groups. Pure products can be isolated by simple filtration or extraction without the need for chromatography or recrystallization. Click chemistry is not limited to biological conditions: the concept of a "click" reaction has been used in pharmacological and various biomimetic applications. However, they have been made notably useful in the detection, localization and qualification of biomolecules. After a click reaction with a bis-azide core, the hydroxymethyl groups were transformed into chloromethyl using SOCl_2 , then azidomethyl before the next click reaction with the AB₂ dendron. A double-stage strategy using AB₂ + CD₂ dendrons was a variant for rapid dendrimer construction [79].