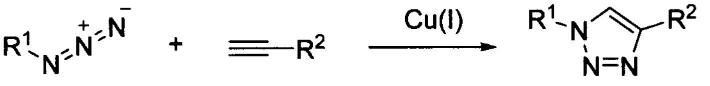
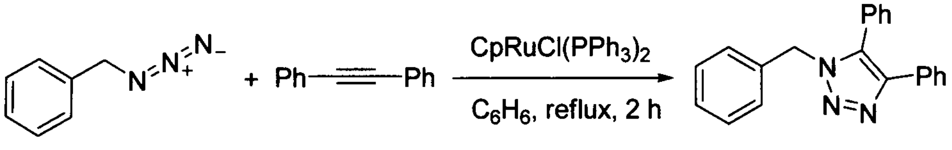
9.3 Construction of the Triazole Ring

9.3.1 Construction of the 1,2,3-Triazole Ring

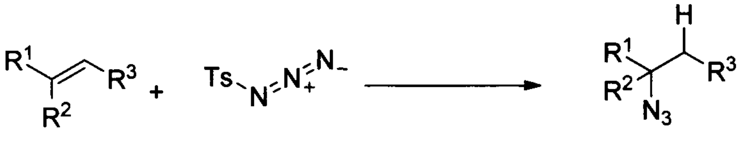
Click chemistry was defined as an approach for the rapid synthesis of drug-like molecules using a few practical and reliable reactions.[27] An example of a click reaction is the Huisgen 1,3-dipolar cycloaddition of alkynes to azides to form 1,4-disubsituted-1,2,3-triazoles. The reaction is efficient, mild, and requires no protecting groups and purification in many cases.[28] The triazole is an isostere of the amide bond, however, it does not undergo cleavage like amides. They are also resistant to oxidation and reduction.



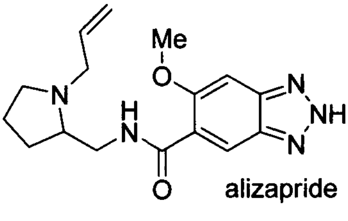
The ruthenium-catalyzed cycloaddition of azides to alkynes to form 1,5-disubstituted triazoles is complimentary to the copper catalyzed route.[29] The Cu(I)-catalyzed reaction is limited to terminal alkynes, and the Ru(II)-catalyzed reaction is active with internal alkynes.



Aliphatic azides are limited in availability and can be prepared by the hydroazidation of deactivated olefins in the presence of a cobalt catalyst.[30]



Alizapride is a dopamine antagonist with less affection on the CNS (central nervous system). It has a prokinetic and an antiemetic effect that can be used in the treatment of nausea and vomiting, including a postoperative side effect.


alizapride