

1, 2, 3-Triazoles as Pharmacophores

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The copper(I)-catalyzed 1,2,3-triazole-forming reaction between azides and terminal alkynes has become the gold standard of “click chemistry” due to its reliability, specificity, and biocompatibility. Click chemistry is a modular synthetic approach towards the assembly of new molecular entities. Applications of click chemistry are increasingly found in all aspects of drug discovery. The triazole products are more than just passive linkers; they readily associate with biological targets, through hydrogen-bonding and dipole interactions. The synthetic molecules that contain 1,2,3-triazole units show diverse biological activities. The present talk will focus mainly on the recent applications of click reaction in the field of medicinal chemistry, in particular on use of the 1, 2, 3-triazole moiety as pharmacophore.

Biography

Vandana Pore received her M. Sc. degree in Organic Chemistry in 1978 from the University of Pune. She then completed her doctoral research at the CSIR-National Chemical Laboratory under the supervision of Dr. Braja Gopal Hazra in the area of synthesis of steroidal plant hormones-brassinosteroids. The University of Pune awarded her a Ph. D. in 1991. She continued her research career at the CSIR-NCL as a research scientist, working particularly in developing multistep synthetic routes to steroidal molecules such as brassinosteroids, mifepristone, squalamine, and so on. She is the author of more than 50 papers and three US patents. She is an expert reviewer for various journals of international reputation. Her research interests are the design and synthesis of bile acid-based drug molecules.

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Development of sustained release dosage form of Poly (lactic acid) loaded gliclazide nanoparticles

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The main purpose of this formulation was to develop PLA (poly-lactic acid) loaded Gliclazide nanoparticles for sustained release drug delivery system with enhanced bioavailability by which we can achieve improvement in patient compliances and to overcome from diabetes as life threatening disease. As methodology Gliclazide PLA (poly-lactic acid) nanoparticles was formulated via two different methods i.e. simple emulsification (O/W) and or multiple water-in-oil-in-water (W/O/W) emulsion followed by solvent elimination, high pressure homogenizer and Freeze drying. The choice of method depends on the physical and chemical characteristics of the entrapment of polymer on both lipophilic and hydrophilic drug. The influence of various formulation factors (Homogenization stirring speed, drug: polymer ratio, freeze drying and addition of surfactants) on particle size, drug loading, and encapsulation efficiency were investigated. As a result both of these methods allow high levels of PLA polymer entrapment. The developed Gliclazide PLA nanoparticles showed high drug loading and encapsulation efficiencies with nanosize/SR (sustained release) nanoparticles. Mean particle size altered by changing the drug: polymer ratio, stirring speed and freeze drying. Addition of surfactants showed a promising result to increase drug loading efficiency, encapsulation efficiency and decreased particle size of PLANPs as well. *In vitro* study revealed SR Gliclazide PLANPs. SEM study revealed surface morphology of the developed PLANPs. FT-IR and DSC, TGA studies showed no interaction of Gliclazide with PLA polymers. These results highlight an important aspect to be considered in the development of Gliclazide PLA nanoparticles as sustained release drug delivery carriers. At last in conclusion we have to mention developed SR Gliclazide PLANPs revealed a decreased dose frequency and enhanced bioavailability with sustained activity. Hence then easy formulation of Gliclazide PLA incorporated nanoparticles findings major implications for the design of sustained release drug delivery system for improvement in patient compliances and to overcome from diabetes as life threatening disease.

Biography

Vinod J. Mokale is working as Assistant Professor and I/C Head, Division of Pharmaceutical Technology, University Department of Chemical Technology, North Maharashtra University, Jalgaon-425001. (M.S.) India, he has guided more than 25 M. Tech. (Pharmaceutical Technology) students under his guidance. He has published more than 10 papers in reputed journals and 01 book chapter in Macmillan Publication. His area of interest is Drug Design & Delivery, Pharmaceutical Instrumentation & Regulatory Affairs, Nanomedicine etc; he has a two project from UGC and DRDO as well as teaching and research experience more than 07 years.

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