

Viral Patel

Ramanbhai Patel College of Pharmacy,
India



Nanocrystal: A novel approach to overcome skin barriers for improved topical drug delivery

Abstract:

Skin is an important route of drug delivery for the treatment of various dermatological conditions. The advent of nanotechnology is paving the roadmaps for topical drug delivery by providing sustained release as well as maintaining a localized effect, outweighing the toxicity concern. The topic highlighted the morphology of skin, its barrier nature as well as drug- penetration pathways after topical application of formulations. The existing methods to improve topical drug delivery, by infringing or permeating the skin barriers, are discussed. This context concretes the foundation to accentuate the need for the development of nanocrystal-based topical formulation. The mechanism of drug release, immediate as well as sustained release, after topical administration of drug nanocrystals is also elaborated. The special emphasis is given on the breakthrough achieved, in topical drug delivery using drug nanocrystals, so far in the plethora of literature, patents, and products, under clinical trial as well as in the market. The current research on nanocrystals for topical drug delivery is highlighting the breakthroughs achieved so far. The output of these research envisages that topical nanocrystals-based formulations can be a novel strategy for the drugs which are facing solubility, bioavailability and toxicity concerns.

Biography

Dr. Viral Patel has completed her PhD from Nirma University, Ahmedabad, India. She is a formulation scientist enthusiastic in learning and gaining expertise in the field formulation and development specifically novel drug delivery systems and injectable dosage forms (simple and complex products). Always keen to take up challenging research/projects and to work on them with utmost dedication is her passion. She has more than 11 scientific paper published in reputed journal along with 4 book chapters published to her credit. Currently she is an editor of book and has worked as topic editor for journals like frontiers in pharmacology. She is serving as reviewer and editorial member for reputed journals. On research front, she is recipient of many research grants funded by government of India.