1ST INTERNATIONAL E-CONFERENCE ON CHANGING WAVES IN HEALTHCARE RESEARCH: FOCUS ON POST-COVID ERA

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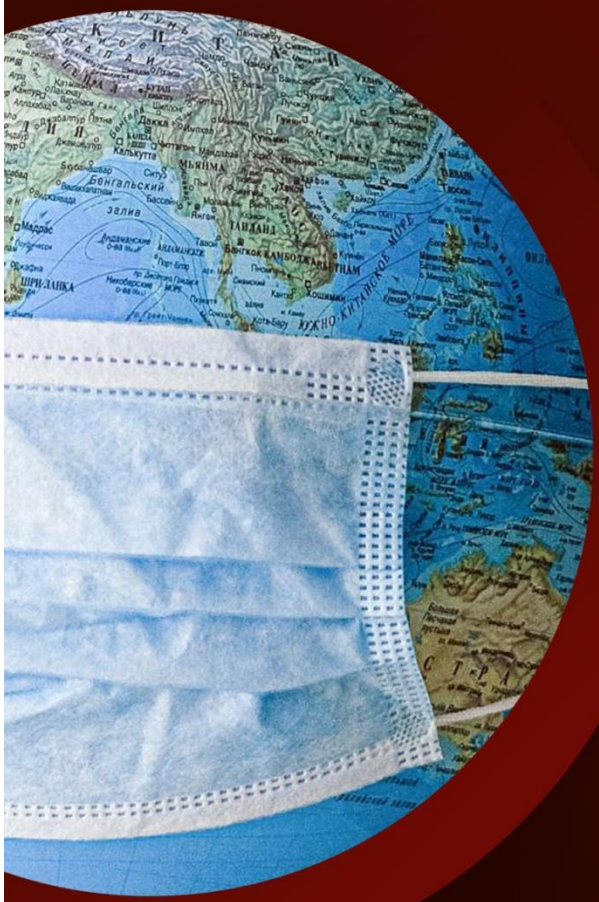

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ABSTRACT BOOK

AU/SOPT/OP11

Enhancement of Solubility and Dissolution of Poorly Soluble Drug by Cocrystallization Technique

Manami Dhibar[1]*, Santanu Chakraborty[1]

[1]Dr. B. C. Roy College of Pharmacy and Allied Health Sciences, Durgapur

email*: manamidhibar@gmail.com, santanu_nil@rediffmail.com

ABSTRACT

In this present research, a pharmaceutical cocrystal of poorly soluble drug was fabricated with a coformer, to improve the various physico-chemical properties of selected model BCS class II drug i.e., telmisartan. Cocrystals were prepared by solution crystallization method with differentratios of hydrophilic coformer. The developed system was subjected to different physicochemical studies, *in-vitro* drug dissolution as well as different analytical studies. Solubility and dissolution studies revealed that prepared cocrystal system was able to improve the solubility and dissolution of telmisartan by 5.86 folds and 2.24 folds respectively.SEM study revealed that formed telmisartan cocrystals were of blade-shaped with flat and smooth edges. DSC and XRD studies were confirmed the formation of cocrystals. Hence, it has been concluded thatcrystal engineering approach can be successfully adopted to improve the physico-chemical properties, solubility and dissolution of poorly solubletelmisartan.

Keywords: Crystal Engineering, Telmisartan, Solubility, Dissolution.

AU/SOPT/OP12

Promising Phytomolecules in Wound management: An *In-silico* study

Vijaya Mandale*, Asha Thomas

Dr. D. Y. Patil Institute of Pharmaceutical Sciences and Research, Pune, Maharashtra

email*: vijayamandale.15@gmail.com

ABSTRACT

Wound healing today continues to remain a challenging problem, especially in case of chronic wounds including burn wounds. With an alarming increase in wound statistics, and with limitations in drugs/preparations available in their effective management, identification of newer molecules acting on multiple targets in the wound healing process is necessary.

The present students focus on the identification of new phytomolecules for wound management using suitable in silico tools like shape and structure-based similarity studies, docking studies and binding energy calculations. Initially phytomolecules form the Zinc Natural molecule database was screened for shape similarity against established phytomolecules such as Curcumin, Chlorogenic acid, Gallic acid and quercetin. The best molecules identify were docked on multiple promising wound healing targets like TNF-α (Tumor necrosis factor alpha), FGF (Fibroblast growth factor), TGF-β (Transforming growth factor beta.) Based on the docking scores, binging energies and interaction studies, Fluorophenyl(analog) ligand exhibited affinity with favourable binding interactions with TNF- α (-7.1 Kcal/mol), FGF (-6.9 Kcal/mol) and TGF- β (-5.1 Kcal/mol). Also 2,4 methoxy benzylidene(analog) demonstrated favourable affinity