

University of Hyderabad, Dr Reddy's to build cold chain solutions for pharma industry



University of Hyderabad

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Hyderabad: Prof Vijaya Bhaskar Marisetty and Dr Varsha Mamidi, School of Management Studies, University of Hyderabad (UoH), will lead a project, in partnership with Dr Reddy's Laboratories, for developing cold chain logistics solutions for pharmaceutical firms.

Pharma companies routinely face multiple compliance, reconciliation issues in their supply chain, especially when exporting critical drugs and vaccines. On several occasions, their products are rejected or delayed due to lapses in the process. Block chain integrated Internet of Things (IoT) framework will help to overcome this hurdle as it ensures a transparent way of sharing information with all stakeholders in the whole end-to-end supply chain network.

Given that the information on the Block chain is immutable and audit ready, this will enhance trust and efficiency in the system. This initiative will provide a first use case for increasing

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University of Hyderabad team gets patent on compounds to target HIV-1 replication



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Hyderabad: The University of Hyderabad (UoH) has been granted a patent "Novel anti-HIV-1 hetero aromatic compounds targeted to HIV-1 associated Topoisomerase II beta kinase". The discovery of new compound has been accomplished through the efforts made by team under supervision of Prof Anand Kondapi for treatment of HIV-1 infection as a new line of therapy, in the Laboratory for Molecular Therapeutics, Department of Biotechnology and Bioinformatics, School of Life Sciences.

immuno-deficiency syndrome), infects human T-helper cells and replicates with the help of host and viral proteins. Topoisomerase II β , is an enzyme shown to be involved in HIV-1 reverse transcription and integration.

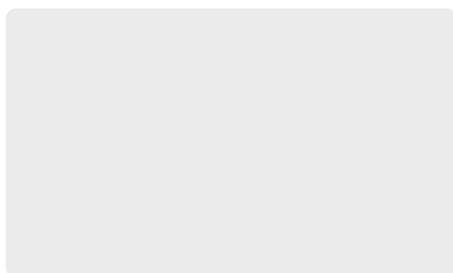
HIV-1-associated Topoisomerase II beta kinase (TopoII β KHIV-1) phosphorylates host Topoisomerase II β at its serine residues and promotes HIV-1 reverse transcription. The present results of analysis of anti-HIV-1 activity and Topoisomerase II β kinase antagonism of pyridine derivatives yielded coumarin, as an important pharmacophore-based on medicinal chemistry. Further, evaluation of the structure-activity relationships (SARs) of coumarin derivatives in silico and in vitro led to the current invention.

The current novel anti-HIV-1 drug candidates were prepared in a two-step process; the first one follows an eco-friendly green chemistry process involving water as solvent, while in the second step a salt is formed. This result of this invention brings out several novel features such as, water solubility of the drug candidates, non-toxic and higher anti-HIV-1 activity at nanomolar concentrations with picomolar antagonism against TopoII β KHIV-1 (a novel target discovered in the lab) leading to a highly significant inhibition of virus replication by blocking HIV-1 DNA synthesis during reverse transcription (as shown in model).

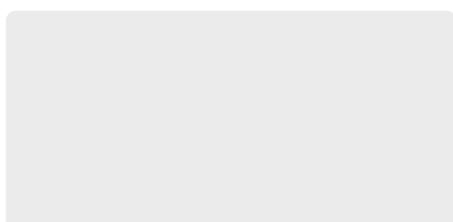
The research team actively working in the research and development of these drugs are Kurumurthy Kammari, Akhila Bommakanti, Kiran Devaraya, Satyajit Mukhopadhyay and Sarita Swain.

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