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## Chitosan bilirubin nanoparticles loaded with losartan as nanomedicine for liver fibrosis therapy

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Bilirubin is hydrophobic in nature and glycol chitosan was covalently attached to this compound via a stable amide bond resulting in chitosan bilirubin (ChiBil). ChiBil is found to have ability to undergo a solubility switch from hydrophobic to hydrophilic in response to intrinsic ROS. Advanced liver fibrosis is a condition characterized by ROS stress and metabolical effects in hepatocytes. In our study, we use ChiBil as a ROS quenching, anti-inflammatory agent which also have ability to load hydrophobic or hydrophilic drug against progression of fibrosis. Therefore, we have loaded losartan, a hyperthensive drug which is proven to have anti-fibrosis effect also, inside ChiBil. We have developed liver fibrosis model in C3H/HeN mice by administering thioacetamide and ethanol. ChiBil-losartan was injected through intravenous route in 3 dosages for a period of 9 days. Finally, we analyzed hepatic histopathology and biochemical estimation, respectively. We observed a dosage dependent improvement of hepatic fibrosis and biochemical examination (AST/ALT ratio) in the ChiBil-losartan treated group. ChiBil-losartan micelles might be useful in reduction of mice hepatic fibrosis model.

### Biography

Reju George Thomas has completed his MTech in Nanotechnology from Amrita Institute of Nanosciences and Molecular Medicine (ACNSMM), India during 2010-2012 and PhD from Chonnam National University (Feb 2016). Currently, he is doing Post-doctoral research under Prof. Yong Yeong Jeong developing theranostic nanoparticles and conducting pre-clinical testing at Clinical Vaccine R&D Centre of Chonnam National University Hwasun Hospital.

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