Overcoming Drug Delivery Challenges with Lipid-Based Nanofibers for Enhanced Wound Repair

*Aaqib Javaid[1], Krishana Kumar Sharma[2], Prakhar Varshney[2], Anurag Verma[2], Shyam Lal Mudavath[3]**

[1]Infectious Disease Biology Laboratory, Chemical Biology Unit, Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali, Punjab (140306), India.

[2]Teerthankar Mahaveer University, Delhi Road, NH 24, Bagadpur, Uttar Pradesh 244001

[3]Department of Animal Biology, School of Life Sciences, University of Hyderabad, Prof. C.R. Rao Road, Gachibowli Hyderabad, 500046. Telangana, India.

***Author for correspondence:**

Dr. Shyam Lal Mudavath,

Associate Professor,

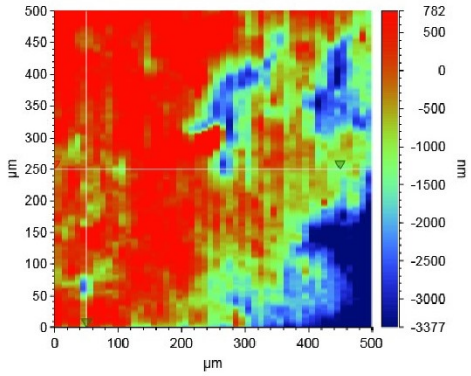
Department of Animal Biology, School of Life Sciences,

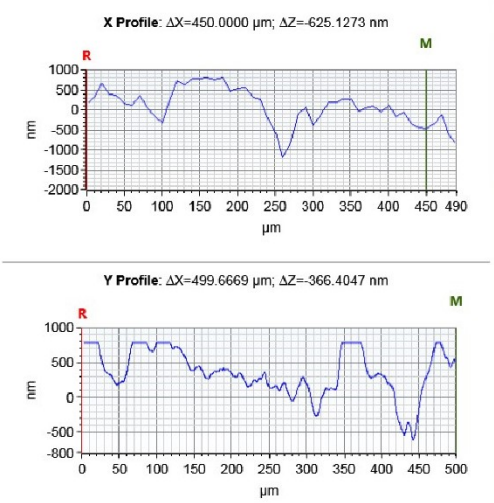
University of Hyderabad, Gachibowli, Hyderabad,

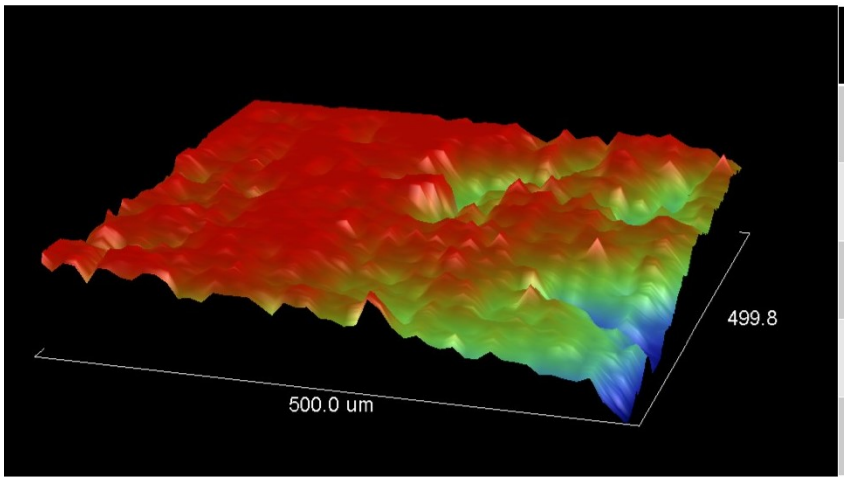
Telangana (State), India - 500046

E-mail: shyamlal_absls@uohyd.ac.in, shavs0502@gmail.com

Supplementary data:







Label	Value (nm)
Ra	575.42
Rp	782.43
Rq	729.5
Rt	4159.77
Rv	-3377.34

Figure S1. Surface profilometry data for NLNF (Ra-

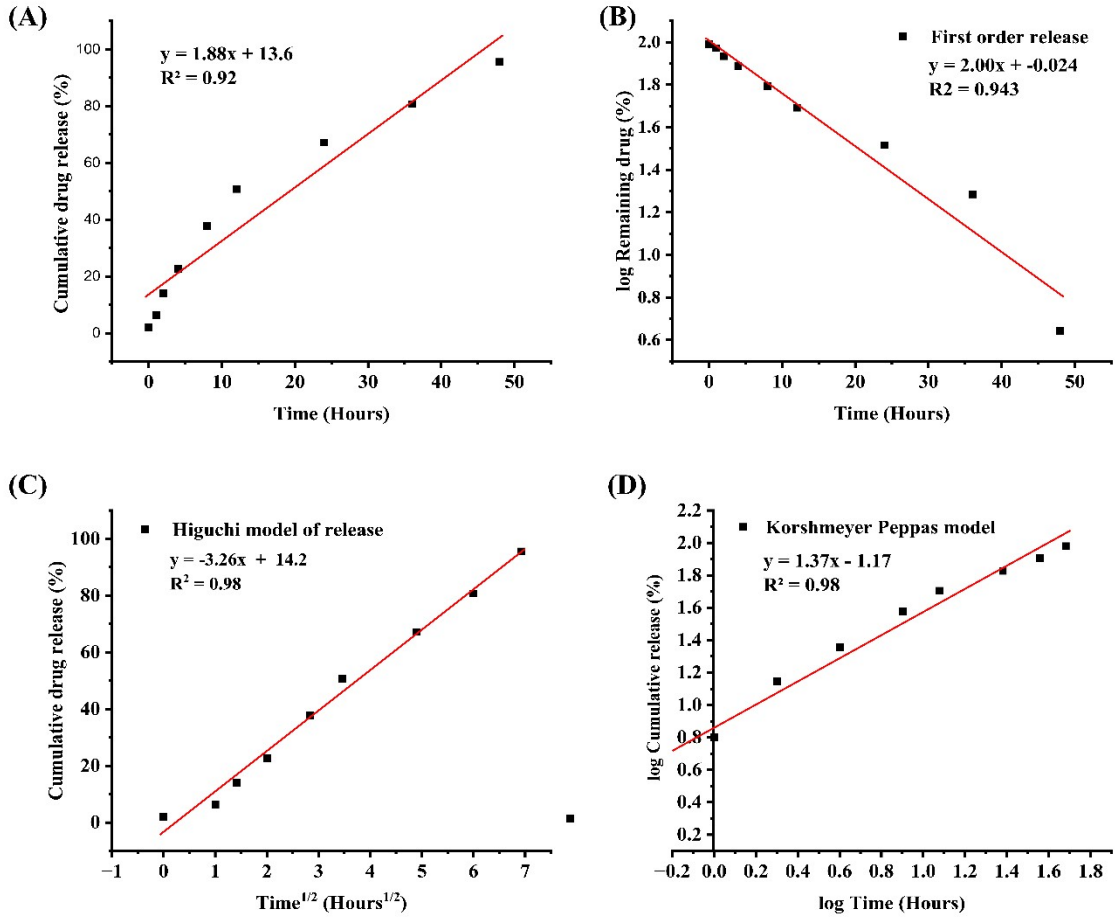


Figure S2. Drug release kinetics, (A) Zero order release model, (B) First order release model, (C) Higuchi release model, (D) Korsmeyer-Peppas release model.

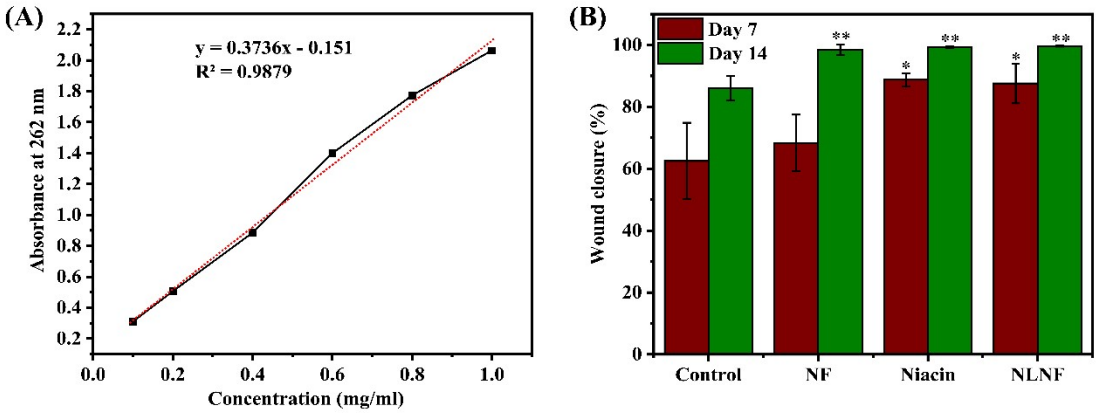


Figure S3. (A) Cal liberation curve for Niacin, (B) Wound closure rate for different formulations applied

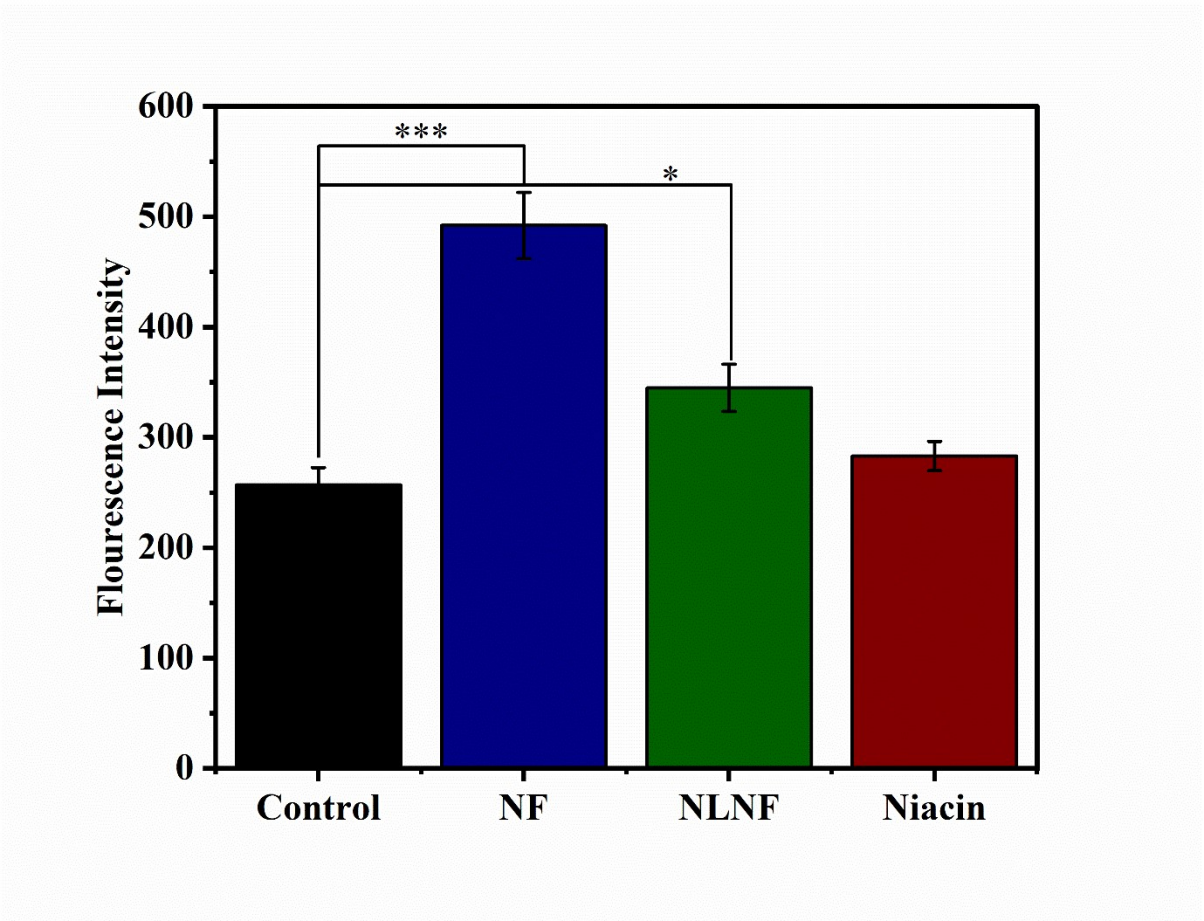


Figure S4. Determination of ROS production through H2DCF-DA assay. Three independent experimental trials were performed, and the representative data are presented as Mean ± Standard Deviation (SD). Statistical significance was indicated by *$p \leq 0.05$, **$p \leq 0.01$, and ***$p \leq 0.001$, corresponding to progressively higher levels of significance, respectively.