Dr. Muhammad Naeem
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Profile

Dr. Muhammad Naeem is a specialist in the fields of Pharmaceutical Nanotechnology and Nanomedicine. He obtained his Doctor of Pharmacy (Pharm-D) degree from the University of Malakand, Pakistan, in 2008, followed by a Master's degree in Pharmaceutical Sciences from the University of Greenwich, United Kingdom, in 2011. He completed his Ph.D. in Pharmacy at Pusan National University, South Korea, in 2013, where his research focused on the development of biomaterial-based drug delivery systems for applications in wound healing, inflammatory disorders, and cancer. Subsequently, he undertook a one-year postdoctoral fellowship in the same laboratory.

Dr. Naeem's research expertise encompasses the fabrication of drug-loaded nano- and microparticles, nanomaterial characterization, the use of experimental animal models of disease (including colitis and cutaneous wounds), pharmacokinetic analysis, and advanced analytical methodologies such as high-performance liquid chromatography (HPLC), enzyme-linked immunosorbent assay (ELISA), and confocal microscopy.

He has authored more than 40 peer-reviewed research publications in renowned high impact factor journal with high citations, reflecting the impact of his scholarly contributions. His work has received international recognition, including the prestigious "Eudragit® Award 2014," conferred for the best research study submitted from Korea, Taiwan, and Japan. Since joining the National University of Medical Sciences (NUMS) in 2018, Dr. Naeem has led several funded research projects, including those supported by NRPU, PSF, and SRGP. He has also supervised graduate students and contributed to teaching at the BS, MS, and Ph.D. levels. Dr Naeem also led the team to launch the first MS degree program in Pakistan under the umbrella of NUMS.

Research Interest

Drug Delivery, Nanomedicine, Biomaterials, Colitis, Wound healing, Cancer

Selected Publications

A. Mehreen, ., F. Batool, U.A. Awan, N. Shabnam, A. Haider, S. Aslam, M. Ghazanfar, F. Ud-Din, M.I. Siddique, **M Naeem*** and R.F Saeed* (2025). "Evaluating the Efficacy of Nano-Cyclosporine

A in Mice Model of Ulcerative Colitis: A Meta-Analysis." Naunyn-Schmiedeberg's Archives of Pharmacology. 1-11

M Naeem, J Lee, MA Oshi, J Cao, SP Hlaing, E Im, Y Jung, JW Yoo (2020). "Colitis-targeted hybrid nanoparticles-in-microparticles system for the treatment of ulcerative colitis."Acta Biomaterialia, 116, pp.368-382

M Naeem, MA Oshi, J Kim, J Lee, J Cao, H Nurhasni, E Im, Y Jung, JW Yoo (2018). "pH-triggered surface charge-reversal nanoparticles alleviate experimental murine colitis via selective accumulation in inflamed colon regions." Nanomedicine: Nanotechnology, Biology and Medicine 14 (3), 823-834

M Naeem, J Bae, MA Oshi, MS Kim, HR Moon, BL Lee, E Im, Y Jung, JW Yoo (2018). "Colon-targeted delivery of cyclosporine A using dual-functional Eudragit® FS30D/PLGA nanoparticles ameliorates murine experimental colitis." International journal of nanomedicine, 1225-1240

JK Noh, **M Naeem,** J Cao, EH Lee, MS Kim, Y Jung, JW Yoo (2016)"Herceptin-functionalized pure paclitaxel nanocrystals for enhanced delivery to HER2-positive breast cancer cells". International Journal of Pharmaceutics, .543-553

Grants/Awards/Achievements

Natural Hydrogel for Wound Healing. (Role: PI, funded by NUMS-IRF, Amount: Rs 1 Million) duration: 2025-2027 [Ongoing]

Gold nanoparticles for Hepatocellular Carcinoma Treatment (Role: Co-PI, funded by HEC-NRPU, Amount: Rs 9.12 Million) duration: 2023-2026 [Ongoing]

Drug Nanocrystals for the Treatment of Colitis. (Role: PI, funded by HEC-NRPU, Amount: Rs 9. Million) duration: 2021-2025 [COMPLETED]

Development of multipurpose Synthetic Microbiome-Based Transplants (SMT) to recover Gut Microbiome Dysbiosis. (Role: Co-PI, funded by HEC-LCF, Amount: Rs 23.33 Million) duration: 2022-2025 [COMPLETED]

Received "Eudragit® Award 2014", awarded for the best study submitted from Korea, Taiwan, and Japan.

Patent Submitted: 2