Stanford

Biki Gupta

Basic Life Research Scientist, Medicine - Med/Blood and Marrow Transplantation

SUPERVISORS

- Robert Negrin

Bio

BIO

I am a Research Scientist in Department of Medicine - Blood & Marrow Transplantation and Cellular Therapy at Stanford University since March, 2023. I received my undergraduate degree from Tribhuvan University, Institute of Medicine in Kathmandu, Nepal and my Ph.D. degree from Yeungnam University in Gyeongsan, South Korea. I received postdoctoral trainings at Kyungpook National University (Daegu, South Korea), University of Pittsburgh (Pittsburgh, Pennsylvania, USA), and Stanford University (Stanford, California, USA). My current research is focused on cellular immunology, particularly on development of a comprehensive understand of the immune mechanisms underlying graft versus host disease and tissue graft rejection.

CURRENT ROLE AT STANFORD

Basic Life Research Scientist

EDUCATION AND CERTIFICATIONS

- PhD, Yeungnam University (2018)

Professional

PROFESSIONAL INTERESTS

cancer immunology, graft-versus-host disease, transplantation tolerance, invariant natural killer T cells, regulatory T cells, CAR-T cell therapy

WORK EXPERIENCE

- Basic Life Research Scientist - Stanford University (March 1, 2023 - present)

Publications

PUBLICATIONS

- **Western Diet Dampens T Regulatory Cell Function to Fuel Hepatic Inflammation in Metabolic Dysfunction-Associated Steatotic Liver Disease.** *Cells*
  Chaudhary, S., Rai, R., Pal, P. B., Tedesco, D., Rossmiller, D., Gupta, B., Singhi, A. D., Monga, S. P., Grakoui, A., Iyer, S. S., Raeman, R.
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- **Off-the-shelf CD117 CAR-iNKT cells as a safe and effective allogeneic immunotherapy targeting AML and its immunosuppressive microenvironment**
  Yan, H., Boonchalermvichian, C., Gupta, B., Baker, J., Zhou, J., Wang, S., Bader, C., Simonetta, F., Negrin, R.

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- **Combined non-myeloablative total lymphoid irradiation and low-dose total body irradiation enhances donor chimerism and leads to islet allograft acceptance.** *American journal of transplantation : official journal of the American Society of Transplantation and the American Society of Transplant Surgeons*
  Pathak, S., Iliopoulou, B. P., Mosher, B., Wells, A., Witherspoon, L., Bader, C. S., Chen, P., Regmi, S., Gupta, B., Dutt, S., Wu, X., Nagy, N., Jensen, et al
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- **Single-cell transcriptomic profiling reveals diversity in human iNKT cells across hematologic tissues.** *Cell reports*
  Jayasinghe, R. G., Hollingsworth, D., Schedler, N. C., Landy, E., Boonchalermvichian, C., Gupta, B., Yan, H., Baker, J., Dejene, B., Weinberg, K. I., Negrin, R. S., Mavers, M.
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- **invariant Natural Killer T cell therapy as a novel therapeutic approach in hematological malignancies.** *Frontiers in transplantation*
  Boonchalermvichian, C., Yan, H., Gupta, B., Rubin, A., Baker, J., Negrin, R. S.
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- **Single cell RNA-sequencing of human invariant natural killer T cells reveals novel transcription factors regulating transcriptionally distinct subsets**
  Mavers, M., Jayasinghe, R., Hollingsworth, D., Boonchalermvichian, C., Gupta, B., Yan, H., Baker, J., Dejene, B., Weinberg, K., Negrin, R.
  AMER ASSOC IMMUNOLOGISTS.2024

- **Selective Targeting of alpha4beta7/MAdCAM-1 Axis Suppresses Fibrosis Progression by Reducing Proinflammatory T Cell Recruitment to the Liver.** *Cells*
  Gupta, B., Rai, R. P., Pal, P. B., Rossmiller, D., Chaudhary, S., Chiaro, A., Seaman, S., Singhi, A. D., Liu, S., Monga, S. P., Iyer, S. S., Raeman, R.
  2024; 13 (9)

- **Heterogeneity of Human Invariant Natural Killer T Cells, Including Novel Naive-like CD8+and Temra-like CD4-CD8-Populations, Revealed through Single Cell RNA-Sequencing**
  Mavers, M., Hollingsworth, D., Jayasinghe, R. G., Boonchalermvichian, C., Gupta, B., Yan, H., Baker, J., Dejene, B., Weinberg, K. I., Negrin, R. S.
  AMER SOC HEMATOLOGY.2023

- **Intestinal Barrier Dysfunction in Fatty Liver Disease: Roles of Microbiota, Mucosal Immune System, and Bile Acids.** *Seminars in liver disease*
  Gupta, B., Rai, R., Oertel, M., Raeman, R.
  2022; 42 (2): 122-137

- **SELECTIVE TARGETING OF alpha 4 beta 7/MADCAM-1 SUPPRESSES HEPATIC FIBROSIS PROGRESSION BY DECREASING RECRUITMENT OF IMMUNE CELLS TO THE INJURED LIVER**
  Gupta, B., Rai, R., Singhi, A., Monga, S. S., Raeman, R.
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- **Recent progress in cancer immunotherapy approaches based on nanoparticle delivery devices** *JOURNAL OF PHARMACEUTICAL INVESTIGATION*
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- **Blocking integrin alpha(4)beta(7)-mediated CD4 T cell recruitment to the intestine and liver protects mice from western diet-induced non-alcoholic steatohepatitis** *JOURNAL OF HEPATOLOGY*
  Rai, R. P., Liu, Y., Iyer, S. S., Liu, S., Gupta, B., Desai, C., Kumar, P., Smith, T., Singhi, A. D., Nusrat, A., Parkos, C. A., Monga, S. P., Czaja, et al
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- **Stealth Polymer-Coated Graphene Oxide Decorated Mesoporous Titania Nanoplatforms for In Vivo Chemo-Photodynamic Cancer Therapy** *PHARMACEUTICAL RESEARCH*
  Gautam, M., Gupta, B., Soe, Z., Poudel, K., Maharjan, S., Jeong, J., Choi, H., Ku, S., Yong, C., Kim, J.
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- **Western diet-induced increase in colonic bile acids compromises epithelial barrier in nonalcoholic steatohepatitis** *FASEB JOURNAL*
  Gupta, B., Liu, Y., Chopyk, D. M., Rai, R. P., Desai, C., Kumar, P., Farris, A. B., Nusrat, A., Parkos, C. A., Anania, F. A., Raeman, R.
  2020; 34 (5): 7089-7102

- **Phytosterol-loaded CD44 receptor-targeted PEGylated nano-hybrid phyto-liposomes for synergistic chemotherapy** *EXPERT OPINION ON DRUG DELIVERY*
  Gautam, M., Thapa, R., Gupta, B., Soe, Z., Ou, W., Poudel, K., Jin, S., Choi, H., Yong, C., Kim, J.
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- **Multifaceted NIR-responsive polymer-peptide-enveloped drug-loaded copper sulfide nanoplatform for chemo-phototherapy against highly tumorigenic prostate cancer** *NANOMEDICINE-NANOTECHNOLOGY BIOLOGY AND MEDICINE*
  Poudel, K., Thapa, R., Gautam, M., Ou, W., Soe, Z., Gupta, B., Ruttala, H., Hanh Nguyen Thuy, Phung Cao Dai, Jeong, J., Ku, S., Choi, H., Yong, C., Kim, et al
  2019; 21: 102042

- **Aerosol technique-based carbon-encapsulated hollow mesoporous silica nanoparticles for synergistic chemo-photothermal therapy** *ACTA BIOMATERIALIA*
  Gautam, M., Thapa, R., Poudel, B., Gupta, B., Ruttala, H., Hanh Thuy Nguyen, Soe, Z., Ou, W., Poudel, K., Choi, H., Ku, S., Yong, C., Kim, J.
  2019; 88: 448-461

- **Tailored Black Phosphorus for Erythrocyte Membrane Nanocloaking with Interleukin-1 alpha siRNA and Paclitaxel for Targeted, Durable, and Mild Combination Cancer Therapy** *THERANOSTICS*
  Ou, W., Byeon, J., Soe, Z., Kim, B., Thapa, R., Gupta, B., Poudel, B., Ku, S., Yong, C., Kim, J.
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- **Hyaluronic acid-capped compact silica-supported mesoporous titania nanoparticles for ligand-directed delivery of doxorubicin** *ACTA BIOMATERIALIA*
  Gupta, B., Poudel, B., Ruttala, H., Regmi, S., Pathak, S., Gautam, M., Jin, S., Jeong, J., Choi, H., Ku, S., Yong, C., Kim, J.
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- **In situ fabrication of mesoporous silica-coated silver-gold hollow nanoshell for remotely controllable chemo-photothermal therapy via phase-change molecule as gatekeepers** *INTERNATIONAL JOURNAL OF PHARMACEUTICS*
  Poudel, B., Soe, Z., Ruttala, H., Gupta, B., Ramasamy, T., Thapa, R., Gautam, M., Ou, W., Hanh Thuy Nguyen, Jeong, J., Jin, S., Choi, H., Yong, C., et al
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- **Polyamino Acid Layer-by-Layer (LbL) Constructed Silica-Supported Mesoporous Titania Nanocarriers for Stimuli-Responsive Delivery of microRNA 708 and Paclitaxel for Combined Chemotherapy** *ACS APPLIED MATERIALS & INTERFACES*
  Gupta, B., Ruttala, H., Poudel, B., Pathak, S., Regmi, S., Gautam, M., Poudel, K., Sung, M., Ou, W., Jin, S., Jeong, J., Ku, S., Choi, et al
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- **Polymeric microsphere-facilitated site-specific delivery of quercetin prevents senescence of pancreatic islets in vivo and improves transplantation outcomes in mouse model of diabetes** *ACTA BIOMATERIALIA*
  Pathak, S., Regmi, S., Nguyen, T., Gupta, B., Gautam, M., Yong, C., Kim, J., Son, Y., Kim, J., Park, M., Bae, Y., Park, S., Jeong, et al
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- **Paclitaxel and Erlotinib-co-loaded Solid Lipid Core Nanocapsules: Assessment of Physicochemical Characteristics and Cytotoxicity in Non-small Cell Lung Cancer** *PHARMACEUTICAL RESEARCH*
  Gupta, B., Poudel, B., Regmi, S., Pathak, S., Ruttala, H., Gautam, M., An, G., Jeong, J., Choi, H., Yong, C., Kim, J.
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- **PEGylated polyaminoacid-capped mesoporous silica nanoparticles for mitochondria-targeted delivery of celastrol in solid tumors** *COLLOIDS AND SURFACES B-BIOINTERFACES*
  Choi, J., Gupta, B., Ramasamy, T., Jeong, J., Jin, S., Choi, H., Yong, C., Kim, J.
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- **PEGylated thermosensitive lipid-coated hollow gold nanoshells for effective combinational chemo-photothermal therapy of pancreatic cancer** *COLLOIDS AND SURFACES B-BIOINTERFACES*
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- **Engineered islet cell clusters transplanted into subcutaneous space are superior to pancreatic islets in diabetes** *FASEB JOURNAL*
  Pathak, S., Regmi, S., Gupta, B., Tung Thanh Pham, Yong, C., Kim, J., Yook, S., Kim, J., Park, M., Bae, Y., Jeong, J.
  2017; 31 (11): 5111–21

- **Multiple polysaccharide-drug complex-loaded liposomes: A unique strategy in drug loading and cancer targeting** *CARBOHYDRATE POLYMERS*
  Ruttala, H., Ramasamy, T., Gupta, B., Choi, H., Yong, C., Kim, J.
  2017; 173: 57-66

- **Single synchronous delivery of FK506-loaded polymeric microspheres with pancreatic islets for the successful treatment of streptozocin-induced diabetes in mice** *DRUG DELIVERY*
  Pathak, S., Regmi, S., Gupta, B., Poudel, B. K., Tung Thanh Pham, Yong, C., Kim, J., Kim, J., Park, M., Bae, Y., Yook, S., Ahn, C., Jeong, J.
  2017; 24 (1): 1350–59

- **Smart chemistry-based nanosized drug delivery systems for systemic applications: A comprehensive review** *JOURNAL OF CONTROLLED RELEASE*
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  2017; 258: 226-253

- **Folate receptor-targeted hybrid lipid-core nanocapsules for sequential delivery of doxorubicin and tanespimycin** *COLLOIDS AND SURFACES B-BIOINTERFACES*
  Gupta, B., Pathak, S., Poudel, B., Regmi, S., Ruttala, H., Gautam, M., Lee, J., Jeong, J., Choi, H., Yong, C., Kim, J.
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- **Preparation and Optimization of Immediate Release/Sustained Release Bilayered Tablets of Loxoprofen Using Box-Behnken Design** *AAPS PHARMSCITECH*
  Tak, J., Gupta, B., Thapa, R., Woo, K., Kim, S., Go, T., Choi, Y., Choi, J., Jeong, J., Choi, H., Yong, C., Kim, J.
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- **A three-dimensional assemblage of gingiva-derived mesenchymal stem cells and NO-releasing microspheres for improved differentiation** *INTERNATIONAL JOURNAL OF PHARMACEUTICS*
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- **Development of Bioactive PEGylated Nanostructured Platforms for Sequential Delivery of Doxorubicin and Imatinib to Overcome Drug Resistance in Metastatic Tumors** *ACS APPLIED MATERIALS & INTERFACES*
  Gupta, B., Ramasamy, T., Poudel, B., Pathak, S., Regmi, S., Choi, J., Son, Y., Thapa, R., Jeong, J., Kim, J., Choi, H., Yong, C., Kim, et al
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- **Preclinical and Clinical Studies Demonstrate That the Proprietary Herbal Extract DA-5512 Effectively Stimulates Hair Growth and Promotes Hair Health** *EVIDENCE-BASED COMPLEMENTARY AND ALTERNATIVE MEDICINE*
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- **Hybrid Congregation of Islet Single Cells and Curcumin-Loaded Polymeric Microspheres as an Interventional Strategy to Overcome Apoptosis Associated with Pancreatic Islets Transplantation** *ACS APPLIED MATERIALS & INTERFACES*
  Pathak, S., Regmi, S., Gupta, B., Poudel, B. K., Tung Thanh Pham, Kim, J., Park, P., Yong, C., Kim, J., Bae, Y., Kim, S., Jeong, J.
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- **Effects of Formulation Variables on the Particle Size and Drug Encapsulation of Imatinib-Loaded Solid Lipid Nanoparticles** *AAPS PHARMSCITECH*
  Gupta, B., Poudel, B., Pathak, S., Tak, J., Lee, H., Jeong, J., Choi, H., Yong, C., Kim, J.
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- **Preparation of High-Payload, Prolonged-Release Biodegradable Poly(lactic-co-glycolic acid)-Based Tacrolimus Microspheres Using the Single-Jet Electrospray Method** *CHEMICAL & PHARMACEUTICAL BULLETIN*

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- **Liquid crystalline nanoparticles encapsulating cisplatin and docetaxel combination for targeted therapy of breast cancer** *BIOMATERIALS SCIENCE*
  Thapa, R., Choi, J., Gupta, B., Ramasamy, T., Poudel, B., Ku, S., Youn, Y., Choi, H., Yong, C., Kim, J.
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- **CO-AGGREGATION OF CURCUMIN LOADED POLY (LACTIC-CO-GLYCOLIC ACID) MICROSPHERES WITH PANCREATIC ISLET CELLS INTO HETEROSPHEROIDS; A POTENTIAL STRATEGY TO DELIVER DRUGS AND BIOLOGICAL AGENTS TO THE ISLETS OF LANGERHANS.**
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- **Co-aggregation of curcumin loaded poly (lactic-co-glycolic acid) microspheres with pancreatic islet cells into heterospheroids; a potential strategy to deliver drugs and biological agents to the islets of langerhans**
  Jeong, J., Pathak, S., Gupta, B., Regmi, S., Pham Thanh Tung, Yong, C., Kim, J., Jeong, J.
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- **Multilayer-Coated Liquid Crystalline Nanoparticles for Effective Sorafenib Delivery to Hepatocellular Carcinoma** *ACS APPLIED MATERIALS & INTERFACES*
  Thapa, R., Choi, J., Poudel, B. K., Tran Tuan Hiep, Pathak, S., Gupta, B., Choi, H., Yong, C., Kim, J.
  2015; 7 (36): 20360–68

- **Modulation of Pharmacokinetic and Cytotoxicity Profile of Imatinib Base by Employing Optimized Nanostructured Lipid Carriers** *PHARMACEUTICAL RESEARCH*
  Gupta, B., Poudel, B., Tuan Hiep Tran, Pradhan, R., Cho, H., Jeong, J., Shin, B., Choi, H., Yong, C., Kim, J.
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