Dr. Neha Singh

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Professional Summary

- Innovative scientist, visionary, and experienced researcher with several years of experience in biomedical sciences. Highly interested in implementing modified mRNA technology in Sports Bioscience.
- PhD in Biomedical Sciences with exceptional problem-solving skills. Solid research skills with academic training at **Icahn School of Medicine, Mount Sinai, New York, USA** and **Katholieke Universiteit Leuven, Belgium**. Published 18 research articles with 300 citations in international peer reviewed journals.
- Proficiency in planning, establishing and managing goal-oriented projects, multitasker with proven organization, communications and scheduling skills. Able to work independently and be willing to take leadership roles. Proven ability as a self-starter and performing successfully under deadlines.

Work Experience

Assistant Professor

[11 December 2019 - Present]

Central University of Rajasthan, Ajmer, India

- Mentoring and teaching university students, helping them achieve their full potential in studies. Dedicated to university programs and events that help promote learning and support the community. Organized and driven with the innate ability to stay on task. Looking to contribute my knowledge, skills and experience for the growth of the organization.

Guest Faculty

[1 August 2018 – 9 December 2019]

Maharshi Dayanand Saraswati University, Ajmer, India

- Developed instructional content, promoted classroom discussions, assessed students' performance throughout the semester with consistent improvement in students' skills. Applied excellent coaching, teaching, and motivational skills when working with individual students and encouraged them to work to their potential. Friendly and personable, making interactions with students and colleagues pleasant even when discussing ways students should improve. Solid ability to stay organized and on top of important deadlines when teaching a full load of classes each semester.

Scientific consultant

[December 2017 – July 2018]

Probtech Innovations, Spain

- Developed bioreactors equipped with photonic detection probes.
- Led a project focused on product development, implemented innovative ideas to devise novel portable products
- Designed bioreactors equipped with photonic detection probes to avail real time monitoring or detection of substances in a given medium or biological sample

Postdoctoral Fellow

[August 2015 - November 2017]

Icahn School of medicine at Mount Sinai New York, NY, USA

- Project : Immunomodulation in the heart after myocardial infarction using modified mRNA
- Initiated and led a project to target post MI inflammation in heart by using modRNA therapy resulting in reduced myocardial scar and improved cardiac repair

- Developed an innovative idea implementing use of novel modRNA technology for inducing immunosuppression in various inflammatory conditions
- Filed 1 patent, created collaborations and participated in different projects based on novel modRNA technology
- Supervised 2 medical (MD) students in their research projects

Achievements and awards

- **Recipient of Godawati Satyanarayan Gold Medal (August 2010)**
- IELTS Overall Band Score: 7
- GMAT score: 610
- Qualified GATE 2009 with Percentile Score: 85.36.
- **National Scholarship** for academic excellence at Sacred Heart Inter College, Uttar Pradesh, India; July 1997- June 1999; July 1999- June 2001
- European Society of Cardiology conference travel award (2012)

Education

Ph.D., Biomedical Sciences [March 2012 - March 2015]

Katholieke Universiteit Leuven, Belgium
Thesis: "Development of prediction models for allograft vasculopathy in heart transplant recipients"
Advisors: Professor Dr. Bart De Geest, Professor Dr. Johan Van Cleemput

Successfully led a project investigating novel cardiovascular biomarkers to predict the presence of cardiac allograft vasculopathy (CAV) in heart transplant recipients. Created new possibilities for 3 more PhD students to investigate novel biomarkers in cardiovascular diseases. Developed prediction models for CAV. Supervised 1 masters and 1 pre-doctoral student in their dissertation projects.

Pre-Doctoral programme [March 2010 - Feb 2012]

Katholieke Universiteit Leuven, Belgium

Master of Science (Biochemistry) [August 2009]

Jiwaji University, Gwalior, India
GOLD MEDALIST (1st rank)
M.Sc. project at Central Food Technological Research Institute (CFTRI), Mysore, India.

Bachelor of Science (Biotechnology) [June 2007]

M. J. P. Rohilkhand University, Bareilly, India
Research project at *Cell Biology Laboratory, IBMB-Institut de Biologia Molecular de Barcelona, CID (CSIC), Catalunya, Spain*

Techniques, Software & Instrumentation

Technical skills: modified mRNA synthesis, Flow cytometry, Cell culture techniques, Fluorescence and Phase contrast microscopy, ELISA, Immunostaining, Western blotting, RT-PCR
Software skills: MS OFFICE, ORIGIN, LaTeX, MATLAB, LABVIEW (basic), Adobe illustrator, Photoshop, Deltagraph, Instat, SAS (basic), PRISM, Image J

International Conferences

- European Society of Cardiology Congress. Munich, Germany, 25-29 August 2012, 752-752.
- 7th IAS Workshop on HDL 2014. Rome, March 26-28 2014.

Publications

Magadum, A., **Singh, N**, Kurian, A.A., et al. (2020). Pkm2 Regulates Cardiomyocyte Cell Cycle and Promotes Cardiac Regeneration. Circulation, 141:1249-1265.
(doi: https://doi.org/10.1161/CIRCULATIONAHA.119.043067)

Magadum, A, **Singh, N**, Hajjar RJ, Zangi, L. (2020). Induction of cardiac regeneration using cardiomyocytes-specific Lin28 modified mRNA. (Manuscript under preparation for Science Translational Medicine)

Magadum, A, **Singh, N**, Kurien, A, Chepurko, E, Roger Hajjar, RJ, Zangi, L. (2019). The role of Pip4k2c in cardiac hypertrophy and fibrosis. (Manuscript submitted to Nature medicine)

Magadum A, **Singh, N**, and Zangi L. (2018) Ablation of a single N-glycosylation site of human FSTL1 induces cardiomyocytes proliferation and cardiac regeneration. Mol Ther Nucleic Acids. 13:133-143

Sultana N, I., Magadum, A., Hadas, Y., Kondrat, J., **Singh, N.,** Youssef,E., Calderon, D., Chepurko, E., Dubois, N., J Hajjar, R., Zangi, L. (2017). Optimizing cardiac delivery of modified mRNA. Molecular Therapy, 25(6):1306-15.

Muthuramu, I., Amin, R., **Singh, N.**, De Geest, B. (2016). Dietary saturated fatty acids aggravate pressure overload-induced cardiomyopathy in mice in the absence of cardiac steatosis. Atherosclerosis, 252:e119.

Singh, N., Heggermont, W., Fieuws, S., Vanhaecke, J., Van Cleemput, J., De Geest, B. (2015). Endothelium-enriched microRNAs predict the presence of cardiac allograft vasculopathy. Journal of Heart and Lung Transplantation, 34(11): 1376-84.

Singh, N., Vanhaecke, J., Van Cleemput, J., De Geest, B. (2015). Markers of endothelial injury and platelet microparticles are distinct in patients with stable native coronary artery disease and with cardiac allograft vasculopathy. International Journal of Cardiology, 179, 331-333.

Muthuramu, I., Amin, R., **Singh, N.**, De Geest, B. (2015). Role of lipids and lipoproteins in myocardial biology and in the development of heart failure. Clinical Lipidology, 10:329-342.

Muthuramu, I., **Singh, N.,** Amin, R., Postnov, A., Dresselaers, T., Gheysens, O., Jacobs, F., De Geest, B. (2015) Selective cholesterol lowering gene transfer attenuates the development of pressure overload-induced cardiomyopathy in mice. Atherosclerosis, 241:e60.

Muthuramu, I., **Singh, N**., Amin, R., Nefyodova, E., Debasse, M., Van Horenbeeck, I., Jacobs, F., De Geest, B. (2015) Selective homocysteine lowering gene transfer attenuates the development of pressure overload-induced cardiomyopathy in mice via reduced oxidative stress. J Mol Med, 93: 609.

Van Linthout, S., Frias, M., **Singh, N.**, De Geest, B. (2014). Therapeutic potential of HDL in cardioprotection and tissue repair. Handbook of Experimental Pharmacology, 527-565.

Singh, N., Jacobs, F., Rader, D., Vanhaecke, J., Van Cleemput, J., De Geest, B. (2014). Impaired cholesterol efflux capacity and vasculoprotective function of HDL in heart transplant recipients. Journal of Heart and Lung Transplantation, 33(5): 499-506.

Muthuramu, I., Jacobs, F., **Singh, N.,** Gordts, S., De Geest, B. (2013). Selective homocysteine lowering gene transfer improves infarct healing, attenuates remodelling, and enhances diastolic function after myocardial infarction in mice. PLoS One, 8 (5), art.nr.e63710.

Gordts, S., **Singh, N.,** Muthuramu, I., De Geest, B. (2013). Pleiotropic effects of HDL: towards new therapeutic areas for HDL-targeted interventions. Current Molecular Medicine, 14(4):481-503.

Gordts, S., Van Craeyveld, E., Muthuramu, I., **Singh, N.,** Jacobs, F., De Geest, B. (2012). Lipid Lowering and HDL Raising Gene Transfer Increase Endothelial Progenitor Cells, Enhance Myocardial Vascularity, and Improve Diastolic Function. PLoS One, 7(10), e46849.

Singh, N., Van Craeyveld, E., Tjwa, M., Ciarka, A., Emmerechts, J., Droogne, W., Gordts, S., Carlier, V., Jacobs, F., Fieuws, S., Vanhaecke, J., Van Cleemput, J., De Geest, B. (2012). Circulating apoptotic endothelial cells and apoptotic endothelial microparticles independently predict the presence of cardiac allograft vasculopathy. Journal of the American College of Cardiology, 60(4): 324-331.

Van Craeyveld, E., Gordts, S., **Singh, N.,** Jacobs, F., De Geest, B. (2012). A critical reassessment of murine and rabbit models of atherosclerosis: focus on lesion progression and remodeling. Acta Cardiologica, 67 (1), 11-21.

Selected publications:

Singh, N. et al., Journal of the American College of Cardiology, 60(4): 324-331
Singh, N. et al., Journal of Heart and Lung Transplantation, 33(5): 499-506
Singh, N. et al., International Journal of Cardiology, 179, 331-333
Singh, N. et al., Journal of Heart and Lung Transplantation, 34(11): 1376-84

Google scholar profile Neha Singh

Interests and Strengths

- Personal: Honesty, Hard work, Resourcefulness, Inter-cultural bonding and Team spirit.
- Languages: English, Hindi, Sanskrit, Punjabi, Catalan (basic).
- Leisure: Cultural/artistic events, Planning and organizing social walking events, Participation in Yoga and Meditation camps, playing football, chess and badminton
- Hobbies: Writing, Reading, Sketching, Painting, Travelling, Bird watching, Photography, Music, Cinema.

References

- Available upon request