# Vishwa Deepak, Ph.D.

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School of Dental Medicine
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## Research Experience

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| 04/2020 – 02/2022 | **School of Dental Medicine, University of Pennsylvania, USA**<br>**Visiting Postdoctoral Researcher** (Allergy & Immunology: Role of MRGPRX2 in mast cell activation) |
| 03/2017 – 03/2020 | **School of Dental Medicine, University of Pennsylvania, USA**<br>**Visiting Postdoctoral Researcher** (Cilia and Bone biology: Role of ciliary IFT proteins in regulation of bone remodeling) |
| 10/2015 – 02/2017 | **Department of Biomedical Engineering, National University of Ireland Galway, Ireland**<br>**Postdoctoral Researcher** (Bone Mechanobiology) |
| 09/2013 – 08/2015 | **Department of Physiology, University of Pretoria, Pretoria, South Africa**<br>**Postdoctoral Researcher** (Cellular Bone Research: Analysis and identification of novel anti-osteoclastogenic small molecules) |
| 09/2013 – 08/2015 | **Department of Physiology, University of Pretoria, Pretoria, South Africa**<br>**Adhoc Lecturer** (Physiology) |
| 01/2013 – 07/2013 | **Indian Veterinary Research Institute, India**<br>**Research Associate** (Regenerative Medicine: Isolation of bone marrow stem cells and their regenerative potential) |
| 10/2011 – 03/2012 | **Indian Institute of Technology, Roorkee, India**<br>**Research Associate**<br>(Molecular Endocrinology: Analysis of environmental xenobiotics for their effects on bone cells) |

## EDUCATION

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|---|---|
| 2008-2011 | **Northeast Normal University, Changchun, China**<br>**PhD in Biochemistry & Molecular Biology** |
| 2004-2006 | **Jiwaji University, Gwalior, India**<br>**Master of Science in Biotechnology** |
| 2001-2004 | **Jiwaji University, Gwalior, India**<br>**Bachelor of Science in Biotechnology** |

## OTHER PROFESSIONAL ACTIVITIES

**ADHOC REVIEWER** Chemical Papers, Biotechnology and Applied Biochemistry, Journal of Cell Physiology, Cell Biochemistry & Function Acta Physiologiae Plantarum, Biofactors, Cytotechnology, Plant Physiology and Biochemistry, Journal of cellular Physiology, Calcified Tissue International, Osteoporosis International, BMC Musculoskeletal Disorder, BMC Complementary and Alternative medicine, Cell Proliferation, Frontiers Pharmacology, Phytotherapy research, Frontiers in Immunology, BioMed Research International, Journal of Cancer, Mathematical Biosciences and Engineering, Zeitschrift für Naturforschung C, Journal of Molecular Liquids, Journal of the Taiwan Institute of Chemical Engineers, Frontiers in Endocrinology/Bone Research

## AWARDS & HONORS

2013-2015 University of Pretoria, Pretoria, South Africa
**Vice Chancellor's Postdoctoral Research Fellowship**

2007-2011 Northeast Normal University, Changchun, China
**PhD Scholarship, jointly awarded by Ministry of Human Resource Development, the Government of India and Chinese Scholarship Council, the Government of China**

## PEER REVIEWED PUBLICATIONS (23)

1. **Deepak V,** Yang S-T, Li Z, Li X, Ng A, Xu D, Y-P Li, Oursler MJ, Yang S. IFT80 negatively regulates osteoclast differentiation via association with Cbl-b to disrupt TRAF6 stabilization and activation. The Proceedings of the National Academy of Sciences of the United States of America (PNAS). 2021. (Accepted) **Impact Factor: 11.2，Q1**

2. **Deepak V**, Komarow HD, Alblaihess AA, Carter MC, Metcalfe DD, Ali H. Expression of MRGPRX2 in skin mast cells of patients with maculopapular cutaneous mastocytosis. The Journal of Allergy and Clinical Immunology: In Practice. 2021 Oct 1;9(10):3841-3. **Impact Factor: 8.86，Q1**

3. Roy S, Chompunud Na Ayudhya C, Thapaliya M, **Deepak V**, Ali H. Multifaceted MRGPRX2: New insight into the role of mast cells in health and disease. J Allergy Clin Immunol. 2021 Aug;148(2):293-308. **Impact Factor: 10.79 Q1**

4. Li X, Yang S, **Deepak V**, Chinipardaz Z, Yang S. Identification of Cilia in Different Mouse Tissues. Cells. 2021 Jul;10(7):1623. **Impact Factor: 6.6**

5. Moosa, S., Kasonga, A.E., **Deepak, V.,** Marais, S., Magoshi, I.B., Bester, M.J., Kruger, M.C. and Coetzee, M., 2018. Rooibos tea extracts inhibit osteoclast formation and activity through the attenuation of NF-κB activity in RAW264. 7 murine macrophages. Food Funct., 2018,9, 3301-3312 **Impact Factor: 4.94**

6. **Deepak V,** Kayastha P, McNamara LM. Estrogen deficiency attenuates fluid flow–induced [Ca2+] i oscillations and mechanoresponsiveness of MLO-Y4 osteocytes. The FASEB Journal. 2017 Mar 31:fj-201601280R. **Impact Factor: 5.191，Q2**

7. **Deepak V**, Kruger MC, Coetzee M. Geraniol attenuates osteoclast differentiation by suppressing NF-kB activity and expression of osteoclastogenic genes. Medicinal

Chemistry Research. 2017 Jan 1;26(1):19-26. **Impact Factor: 1.965**

8. Sagar T, Rantlha M, Kruger MC, Coetzee M, **Deepak V***. Ferulic acid impairs osteoclast fusion and exacerbates survival of mature osteoclasts. Cytotechnology. 2016 Oct 1;68(5):1963-72. (***Corresponding author**). **Impact factor: 2.362**

9. Rantlha M, Sagar T, Kruger MC, Coetzee M, **Deepak V***. Ellagic acid inhibits RANKL-induced osteoclast differentiation by suppressing the p38 MAP kinase pathway. Arch Pharm Res. 2017 Jan 1;40(1):79-87. (***Corresponding author**). **Impact factor: 4.946**

10. **Deepak V**, Kasonga A, Kruger MC, Coetzee M. Carvacrol inhibits osteoclastogenesis and negatively regulates the survival of mature osteoclasts. Biol Pharm Bull. 2016 Jul 1;39(7):1150-8. **Impact factor: 2.233**

11. Kumar S, **Deepak V**, Kumari M, Dutta PK. Antibacterial activity of diisocyanate-modified chitosan for biomedical applications. Int J Biol Macromolec. 2016 Mar 31;84:349-53. **Impact factor: 6.953**

12. **Deepak V**, Kruger MC, Joubert A, Coetzee M. Piperine alleviates osteoclast formation through the p38/c-Fos/NFATc1 signaling axis. BioFactors. 2015 Nov 12;41(6):403-13

    **Impact factor: 6.113，Q2**

13. Kruger MC, Tousen Y, Katsumata S, Tadaishi M, Kasonga AE, **Deepak V**, Coetzee M, Ishimi Y. Effects of soy phytoestrogens and New Zealand functional foods on bone health. J Nutr Sci Vitaminol (Tokyo). 2015;61(Supplement):S142-4. **Impact factor: 1.424**

14. Visagie A, Kasonga A, **Deepak V**, Moosa S, Marais S, Kruger MC, Coetzee M. Commercial honeybush (Cyclopia spp.) tea extract inhibits osteoclast formation and bone resorption in RAW264. 7 murine macrophages—an in vitro study. Int J Env Res Public Health. 2015 Oct 28;12(11):13779-93. **Impact factor: 3.39**

15. **Deepak V**, Kasonga A, Kruger M, Coetzee M. "Inhibitory effects of eugenol on RANKL-induced osteoclast formation via attenuation of NF-κ B and MAPK pathways." Connect Tissue Res. 2015 Jun;56(3):195-203. doi: 10.3109/03008207.2014.989320. **Impact factor: 3.417**

16. Dongmei S, **Deepak V***, Mu P, Jiang H, Shi X, Liu Z, Zeng X, Liu W. Constitutive L-Sox5 overexpression delays differentiation of ATDC5 cells into chondrocytes and correlates with reduced expression of differentiation markers. Mol Cell Biochem. 2015;401(1-2):21-6. doi: 10.1007/s11010-014-2288-8. (***Corresponding author**) **Impact factor: 3.282**

17. Kasonga A, **Deepak V**, Kruger M, Coetzee M. Arachidonic Acid and Docosahexaenoic Acid Suppress Osteoclast Formation and Activity in Human CD14+ Monocytes, In vitro. PLoS One.2015; 10(4): e0125145. doi: 10.1371/journal.pone.0125145. **Impact factor: 3.24**

18. Ping M, **Deepak V***, Kang L, Jiang Q, Liu R, Meng L, Zhang Z, Zeng X, Liu W. Ratjadone C- Mediated Nuclear Accumulation of HDAC4: Implications on Runx2-Induced Osteoblast Differentiation of C3H10T1/2 Mesenchymal Stem Cells. Z Naturforsch C. 2014 Nov- Dec;69(11-12):471-8. doi: 10.5560/znc.2014-0065. (***Corresponding author**) **Impact factor 1.632**

19. Boeyens J, **Deepak V**, Chua WH, Kruger M, Joubert AM, Coetzee M. Effects of ω3- and ω6- Polyunsaturated Fatty Acids on RANKL-Induced Osteoclast Differentiation of RAW264. 7 Cells: A Comparative in Vitro Study. Nutrients. 2014 Jul 9;6(7):2584-601. **Impact factor: 5.719**

20. Shi X[#], **Deepak V[#]**, Wang L, Ba X, Komori T, Zeng X, and Liu W. Thrombospondin-1 is a putative target gene of runx2 and runx3. Int J Mol Sci. 2013 Jul 10;14(7):14321-32. doi:10.3390/ijms140714321. (**[#]Co-first author**) **Impact factor**: **5.923，Q2**

21. Zhang Z[#], **Deepak V[#]**, Meng L, Wang L, Li Y, Jiang Q, Zeng X, Liu W. Analysis of HDAC1- mediated regulation of Runx2-induced osteopontin gene expression in C3h10t1/2 cells. Biotechnol Lett. 2012 Feb;34(2):197-203. doi: 10.1007/s10529-011-0756-8. (**[#]Co-first author**) **Impact factor: 2.457**

22. **Deepak V**, Zhang Z, Meng L, Zeng X, and Liu W. Reduced activity and cytoplasmic localization of Runx2 is observed in C3h10t1/2 cells overexpressing Tbx3. Cell Biochem Funct. 2011 Jun;29(4):348-50. doi: 10.1002/cbf.1753. **Impact factor: 3.685**

23. Luo J, Xu T, Wang X, Ba X, Feng X, **Deepak V**, and Zeng X. PI3K is involved in L-selectin-and PSGL-1-mediated neutrophil rolling on E-selectin via F-actin redistribution and assembly. J Cell Biochem. 2010 Jul 1;110(4):910-9. **Impact factor: 4.429**

**Conference proceedings**

1. **Vishwa Deepak, Shuying Yang.** Ciliogenesis is inherent to osteoclastogenesis and IFT proteins drive osteoclast formation. Annual Meeting of the American Society for Bone and Mineral Research. September 28 - October 1, 2018
2. **Vishwa Deepak**, Pushpalata Kayastha, Laoise M. McNamara. Estrogen Inhibition Downregulates [Ca2+]i Oscillations And Alters Secondary Mediators NO And PGE2 Release During Mechanical Loading In Osteocytes Resulting In Reduced Mechanosensitivity. Annual Meeting of the Orthopaedic Research Society, March 19, 2017 - March 22, 2017
3. Marlena C. Kruger, Abe Kasonga, **Vishwa Deepak**, Magdalena Coetzee. “Long chain polyunsaturated fatty acids and bone health." Annual Conference-The New Zealand Institute of Food Science & Technology, Palmerston North, New Zealand. 30 June-2 July 2015.
2. **Vishwa Deepak**, Abe Kasonga, Marlena C. Kruger, Magdalena Coetzee. "Inhibitory effects of carvacrol on osteoclast formation, function and survival." IBMS BoneKEy 13, Article number: 673, 2015 | doi:10.1038/bonekey.2015.53. Presented (poster) at 4th Joint Meeting of European Calcified Tissue Society (ECTS) and the International Bone and Mineral Society (IBMS), Rotterdam, The Netherlands. 25-28 April, 2015.
3. Kruger MC, Tousen Y, Katsumata S, Tadaishi, M, Kasonga AE, **Deepak V**, Coetzee M, Ishimi Y. Selective effects of soy phytoestrogens and New Zealand functional foods on bone health. 2015. Proceedings of the Asia Congress on Nutrition, 14-18 May 2015, Yokohama, Japan.
4. Kruger MC, Kasonga A, **Deepak V**, Coetzee M. Long chain polyunsaturated fatty acids and bone health. French Bone and Mineral Society meeting, 4-6 February 2015.
5. **Vishwa Deepak**, Zhongli Zhang, Lakshmi Tripathi, Xianlu Zeng and Wenguang Liu Histone Deacetylase-1 Expression is Upregulated in Tbx3 Overexpressing Cells. Presented at International Conference on Bioscience, Biochemistry and Bioinformatics-ICBBB 2011, Singapore.

**GRANTS RECEIVED**

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| 2013-2015 | University of Pretoria Vice Chancellor’s Postdoctoral research grant. Project: Effects of polyunsaturated fatty acids on RANKL-induced osteoclast formation. |
| 2013-2015 | Research Committee Grant (Rescom), University of Pretoria. Project: Targeting RANKL-induced osteoclast formation by plant-derived small molecules for the development of novel therapeutics against bone loss. |

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| 2014-2015 | Struwig-Germeshuysen Kankernavorsingstrust (SGKN TRUST), South Africa. Project: Targeting cancer-induced osteoclast formation by plant- derived small molecules. |

**Co-RESEARCH SUPERVISED/TRAINED**

**BSc Summer students:** 2 (UPenn)

**BSc Hons Research:** 2 (Univ. of Pretoria)

**MSc Research:** 1 (National Univ. of Ireland)

**PERSONAL DETAILS**

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| Gender | Male |
| Marital status | Married |
| Languages Known | English (Excellent), Chinese (Intermediate), Hindi (Native speaker) |
| Location | Presently relocated to India |