

CURRICULUM VITAE

Name : **MINTU PAL, PhD**
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PROFESSIONAL EXPERIENCE

- 2015- now Ramanujan Fellow, CSIR-NEIST, Jorhat, Assam, India
- 2014-2015 Senior Research Fellow, School of Materials Science and Engineering, Nanyang Technological University, Singapore.
- 2011-2014 Postdoctoral Fellow, Department of Surgery, University of Colorado, Denver, Colorado and then lab move to Department of Biochemistry and Molecular Biology, Louisiana State University, Shreveport, LA, USA
- 2010-2011 Postdoctoral Associate, Department of Therapeutic Radiology, Yale School of Medicine, New Haven, CT, USA.

EDUCATION

- 2005-2010 Ph.D., Division of Molecular & Cell Biology, School of Biological Sciences, Nanyang Technological University, Singapore
- 2002-2004 M.Pharm. (Pharmacology), Jadavpur University, Kolkata, India
- 1997-2001 B.Pharm., Jadavpur University, Kolkata, India

AWARDS/HONORS/GRANTS:

- Ramanujan Fellowship (Department of Science and Technology, Government of India, 2015).
- Editorial Board member of the Journal of PharmaSciTech
- GATE 2002 (Pharmaceutical Sciences, 92.77 percentile).

SUMMARY OF ACHIEVEMENTS:

- Ramanujan Fellowship by Department of Science and Technology, Government of India, 2015.
- Author of 17 international journal publications (max IF: 29.4), and 20 conference papers and reviewer of 2 international journals with total citations of 298 (from ResearchGate) and RG score of 19.65 (ResearchGate)
- Editorial Board member of the Journal of PharmaSciTech

RESEARCH INTERESTS

- Crosstalk of signaling pathways involving epithelial-mesenchymal transition (EMT) in cancer metastasis
- Mechanism of miRNA mediated gene regulation in cancer
- Skin wound repair and tissue regeneration
- Development of novel cell based assay for drug discovery

RESEARCH GRANT

- Research grant of Rs.7.00 lakh per annum for 5 years from Department of Science and Technology, Government of India, 2015

PUBLICATIONS

- Book Chapters: 1 (invitation from CRC Press Taylor & Francis Group, Boca Raton, USA.; writing in progress)
- In International Journals: Published: 17
- Papers Presented In International/National conferences: 20
- Total Citation: 298 (from ResearchGate)
- *RG Score= 19.65* (from ResearchGate)

RESEARCH EXPERIENCE

1. 2015- Now Ramanujan Fellow at CSIR-NEIST, Jorhat, Assam, India
 - Biomarker development on Prostate Cancer progression
2. 2014--2015 Nanyang Technological University
Under supervision of Associate Prof. Tan Lay Poh
 - Commitment of stem cells to different lineages is regulated by many cues in the local tissue microenvironment. We demonstrate that topography of micropatterned matrix device and cell shape regulates hMSC differentiation into cardiomyogenic lineage.
3. 2011- 2014 University of Colorado, Denver and Louisiana State University, Shreveport, LA.
Under supervision of Prof. Hari Koul
 - SPDEF functions like a tumor metastasis suppressor. However, the underlying mechanism remains unclear. We hypothesize that loss of SPDEF might serve as a prognostic markers to distinguish indolent versus aggressive forms of prostate cancer.
4. 2010-2011 Yale University
Under supervision of Associate Prof. Zhong Yun

- BRCA1 plays an important role in chromatin remodeling and transcriptional regulation and its epigenetic functions appear to be critically involved in the regulation of mammary epithelial cell differentiation or mammary stem cell fate. We hypothesize that BRCA1 can regulate that differentiation via differential expression of microRNAs.

5. 2005-2009 Nanyang Technological University

Under supervision of Associate Prof. Tan Nguan Soon, Andrew

“Identification and characterization of angiotensin-like 4 (angptl4) interacting proteins in wound repair”

- Our findings revealed that specific matrix proteins and integrins are ‘receptors’ of ANGPTL4, which together can assemble into a ternary complex underscored the important role of ANGPTL4 as a novel matricellular protein to modulate integrin-mediated signaling and added a new facet to the cell-matrix interactions and signaling during wound repair and cancer metastasis.

Techniques involved:

- Comprehensive analysis of human miRNA target networks
- Surface plasmon resonance technology: For protein-protein interaction study using BIACORE 3000 and Bio-Rad ProteOn XPR36
- Recombinant protein expression and purification using IsoPrime Multi-chambered Electrofocusing unit and FPLC
- Cryostat and basic histology and microscopy
- Operating light and phase contrast and fluorescent microscopes
- Western blotting, Enzyme-linked immunosorbent assay (ELISA), Immuno-precipitation, Transfection of eukaryotic cells.
- Immunostaining, RNA extraction, reverse transcription, real-time PCR, gene knockdown in cell using virus-mediated siRNA

Animal Experimentation:

- IACUC animal/mouse handling
- Incisional and excisional skin wounding on mice
- Peritoneal, subcutaneous, intramuscular, and tail-vein injection
- Dissection and collection of organ samples
- Blood collection via cardiac puncture

RESEARCH PUBLICATIONS:

- Koul S, Khandrika L, Pshak TJ, Iguchi N, **Pal M**, Steffan JJ, and Koul HK (2014). Oxalate up-regulates expression of IL-R β and activates IL-2R signaling in HK-2 cells, a line of Human renal epithelial cells. **Am J Physiol Renal Physiol**. 306: F1039-46.
- Koul HK, **Pal M** and Koul S (2013). Role of p38 MAP kinase signal transduction in solid tumors. **Genes Cancer** 4: 342–359. Review
- **Pal M**, Pal P (2013). BRCA1 and miRNAs: An Emerging Therapeutic Target and Intervention Tool in Breast Cancer. **Journal of PharmaSciTech** 3: 9-19. Review

- **Pal M** and Koul HK (2013). Role of angiopoietin-like 4 (ANGPTL4), a member of Matricellular proteins: from homeostasis to inflammation and cancer metastasis. **Current Angiogenesis** CAG-EPUB-20130124-1. Review
- Yu H, Tay CY, **Pal M**, Leong WS, Li H, Li H, Wen F, Leong DT, Tan LP (2013). A Bio-inspired Platform to Modulate Myogenic Differentiation of Human Mesenchymal Stem Cells Through Focal Adhesion Regulation. **Adv Healthc Mater** 2: 442-9.
- Leong WS, Wu SC, **Pal M**, Tay CY, Yu H, Li H, Tan LP (2012). Cyclic loading direct hMSCs towards neuronal differentiation. **J Tissue Eng Regen Med** 3: s68-79.
- **Pal M**, Tan MJ, Royston RL, Goh YY, Wang XL, Tang MB, Tan NS (2011). Angiopoietin-like 4 regulates epidermal differentiation. **PLoS ONE** 6:e25377.
- Sahoo NG, Kakran M, Shaal LA, Li L, Müller RH, **Pal M**, Tan LP (2011) Preparation and characterization of quercetin nanocrystals. **J Pharm Sci** 100: 2379-90.
- Tay CY, **Pal M**, Yu H, Leong WS, Tan NS, Ng KW, Venkatraman S, Boey F, Leong DT, Tan LP (2011) Bio-inspired Micropatterned Platform to Steer Stem Cell Differentiation. **Small** 7: 1416-21.
- Sahoo NG, Bao H, Pan Y, **Pal M**, Kakran M, Cheng HK, Li L, Tan LP (2011) Functionalized carbon nanomaterials as nanocarriers for loading and delivery of a poorly water-soluble anticancer drug: a comparative study. **Chem Commun (Camb)** 47: 5235-7.
- Zhu P, Tan MJ, Huang RL, Tan CK, Chong HC, **Pal M**, Lam CR, Boukamp P, Pan JY, Tan SH, Kersten S, Li HY, Ding JL, Tan NS (2011). Angiopoietin-like 4 protein elevates the prosurvival intracellular O₂(-):H₂O₂ ratio and confers anoikis resistance to tumors. **Cancer Cell** 19: 401-15.
- Goh YY*, **Pal M***, Chong HC, Zhu P, Tan MJ, Punugu L, Tan CK, Huang RL, Sze SK, Tang MB, Ding JL, Kersten S, Tan NS (2010) Angiopoietin-like 4 interacts with matrix proteins to modulate wound healing. **J Biol Chem** 285: 32999-3009 (***Authors contributed equally**).
- Goh YY*, **Pal M***, Chong HC, Zhu P, Tan MJ, Punugu L, Lam CR, Yau YH, Tan CK, Huang RL, Tan SM, Tang MB, Ding JL, Kersten S, Tan NS (2010). Angiopoietin-like 4 interacts with integrins beta1 and beta5 to modulate keratinocyte migration. **Am J Pathol** 177: 2791-803 (***Authors contributed equally**).
- Tay CY, Yu H, **Pal M**, Leong WS, Tan NS, Ng KW, Leong DT, Tan LP (2010) Micropatterned matrix directs differentiation of human mesenchymal stem cells towards myocardial lineage. **Experimental Cell Research** 316: 1159-68.

- Tan SH*, **PAL M***, Tan MJ, Wong MH, TAM FU, Teo JW, Chong HC, Tan CK, Goh YY, Tang MB, Cheung PC, Tan NS (2009) Regulation of cell proliferation and migration by TAK1 is via transcriptional control of von Hippel-Lindau tumor suppressor. *J Biol Chem* 284: 18047-58 (* **Authors contributed equally**).
- Mani Senthil Kumar KT, Gorain B, Roy DK, Zothanpuia, Samanta SK, **Pal M**, Biswas P, Roy A, Adhikari D, Karmakar S, Sen T (2008) Anti-inflammatory activity of *Acanthus ilicifolius*. *J Ethnopharmacol* 120: 7-12.
- Nag Chaudhuri AK, Karmakar S, Roy D, Pal S, **Pal M**, Sen T (2005) Anti-inflammatory activity of Indian black tea (Sikkim variety) *Pharmacol Res* 51:169-75.

CONFERENCE ABSTRACTS AND PRESENTATIONS (Selected):

- **Pal M**, Sweaty Koul, David Crawford, Hari Koul (2013). Transcription factor SPDEF regulates aggressive phenotype in PCa modulating E-Cadherin expression. 92nd Annual meeting of the South Central Section of the AUA, Chicago, USA.
- **Pal M**, Sweaty Koul, Joshua Steffan, Randall Meacham, Hari Koul (2012). Prostate-derived Ets factor suppresses epithelial-to-mesenchymal transition by regulating E-Cadherin expression in prostate cancer cells. 91st Annual meeting of the South Central Section of the AUA, Colorado Springs, CO.
- **Pal M**, Punugu L, Chong HC, Tan MJ, Tan CK, Sze SK, Tang MBY, Ding JL, Kersten S, Tan NS (2008) Angiopoietin-like 4 regulates keratinocyte survival, differentiation and migration. International conference center, Kyoto, Japan.
- Goh YY, **Pal M**, Punugu L, Chong HC, Tan MJ, Tan CK, Sze SK, Tang MBY, Ding JL, Kersten S, Tan NS (2008) Angiopoietin-like 4 regulates keratinocyte survival, differentiation and migration. International conference center, Kyoto, Japan.
- **Pal M** and Tan NS (2007) Angiopoietin-like protein 4 accelerates keratinocyte migration. 2nd Korea-Singapore International Conference on Bioscience & Biotechnology, (KSICBB2007), Seoul, Korea.
- Tan SH, **PAL M**, Tan MJ, TAM FU, Teo JWT, Chong HC, Tan CK, Goh YY, Tang MBY, For Cheung PC, Tan NS (2007) The role of fasting induced adipose factor in epithelial wound repair. 2nd Korea-Singapore International Conference on Bioscience & Biotechnology, (KSICBB2007), Seoul, Korea.
- **Pal M** (2005) *In vitro* and *in vivo* Antioxidant Activity of Quercetin -3 -*o*-Rutinoside – A Compound Isolated from the Flowers of *Dregea volubilis*. International Conference on “Promotion and Development of Botanicals with International Coordination: Exploring quality, safety, efficacy and regulations”.

- Roy DK, **Pal M**, Gurain B, Sen T, Nag chaudhuri AK (2003) Studies on anti-inflammatory and antioxidant activity of Indian black tea. 36th Annual conference of Indian Pharmacological society.
- Dhara A, **Pal M**, Gurain B, Samanta S, Adhikari D, Sen T, Nag Chaudhuri AK (2003) Pharmacological studies on the anti-ulcer activity of *Tragia involucrate*. 36th Annual conference of Indian Pharmacological Society.
- Gorain B, **Pal M**, Roy DK, Sen T, Nag Chaudhuri AK (2003) Pharmacological studies in *Acanthus illicifolius*- a plant from Sunderban mangroves. 36th Annual conference of Indian Pharmacological society.
- Samanta S, **Pal M**, Nag Chaudhuri AK (2002) Antiulcer activity of tricyclic antidepressant drugs. 35th Annual conference of Indian Pharmacological society.

SCIENTIFIC WORKSHOPS AND SYMPOSIUMS ATTENDED

Attended a workshop cum seminar on **BIOEQUIVALENCE STUDY** organized by Bioequivalence Study Centre, Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India, Nov' 2003.

RESPONSIBLE CARE AND USE of LABORATORY ANIMALS

A*STAR Biological Resource Centre, Agency for Science, Technology and Research, Singapore