

AGHILA RANI K.G

Post-Doctoral Research Associate (Wound Healing & Oral Diagnosis)
Sharjah Institute for Medical Research, University of Sharjah, United Arab Emirates
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EDUCATION

- **Post-doctorate** in “*Investigating the role of immune cells and mesenchymal stem cells in the pathogenesis of endometriosis*” - Indian Council of Medical Research, Govt. of India. (Apr 2010 – Apr 2013)
- **Ph.D** in “*Regulatory signals for expansion of human adult resident cardiac stem cells*” – Sree Chitra Institute for Medical Sciences & Technology, India. (Jan 2005- May 2009)
- **Master of Science in Biotechnology** - Bharatiar University, India (2004)
- **Bachelor of Science in Biotechnology and Botany**– University of Kerala, India (2002)

RESEARCH EXPERIENCE

- **Faculty** – American Academy & Board of Regenerative Medicine (AABRM- MENA) – Apr 2019 –Jan 2020
- **Associate Editor** in Matters of the Heart (International Academy of Cardiovascular Sciences, India Chapter) - Jan 2017 onwards
- **Researcher** at College of Medicine, University of Sharjah - Oct 2017-Dec 2017
Project title: Identifying the FTO rs9939609 “A” allele and its association with impaired fasting glucose in Emirati population
- **Research Associate** at NIRRH (Indian Council of Medical Research), Govt. of India, Mumbai, India - Aug 2014- Mar 2016.
- Specialization in managing projects involving Clinical Research, Molecular Biology, Cell Biology, Immunology, Cardiovascular Biology, Reproductive Biology, Adult stem cells (Cardiac stem Cells, Mesenchymal Stem cells), Growth factor receptor signaling and Angiogenesis.
- Handling clinical specimens such as blood, biopsy samples (right atrial & endometrial biopsies) and small laboratory animals (wild type & NOD/SCID mice).
- Immunomodulation in MSCs and role of TLRs
- Expertise in designing *in vitro* and *in vivo* systems, cell migration studies, gene therapy, viral vectors - adenovirus purification, infection, immunohistochemistry, confocal & fluorescent microscopy, FACS, MACS and cytokine arrays.
- Expertise in stem cell cloning, cell signaling pathways, DNA/RNA isolation, real time RTPCR, DNA sequencing, bacterial cloning, selection and protein techniques (purification & chromatography).
- Animal experiments: Designing and creation of experimental models of disease like Myocardial infarction and Endometriosis.
- MSC mediated anti-angiogenic (anti-VEGF) therapy in SCID mouse models
- Transfection experiments involving eGFP and Adenoviral propagation and transduction experiments.

- Conducted and coordinated seminars, course work lecturers for PhD scholars and short-term workshops.
 - Efficient written and oral presentation skills
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TEACHING EXPERIENCE

- Faculty – American Academy & Board of Regenerative Medicine (AABRM- MENA)
 - Courses taught – Stem Cell Biology, cell culture techniques, cell signaling, PRP/PRF isolation & therapeutic applications
 - Conducting course work lectures for PhD scholars and co-supervised graduate/post-graduate students for fulfillment of summer project/dissertation work
 - Lecturer in Biotechnology at St. Mary's college (Mahatma Gandhi university), Kerala, India – 2004
 - Courses taught - Cell Biology, Genetics, Molecular Biology, rDNA technology, Research Methodology, Immunology, Biochemistry and Stem cell biology
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PUBLICATIONS

1. Abdullah N, Al Marzooq F, Mohamad S, Abd Rahman N, **KG Aghila Rani**, Chi Ngo H, Samaranyake LP. The antibacterial efficacy of silver diamine fluoride (SDF) is not modulated by potassium iodide (KI) supplements: A study on in-situ plaque biofilms using viability real-time PCR with propidium monoazide. PLoS One. 2020 Nov 3;15(11):e0241519.
2. Saber-Ayad M, Manzoor S, El Serafi A, Mahmoud I, Hammoudeh S, **KG Aghila Rani**, Abusnana S, Sulaiman N. The FTO rs9939609 "A" allele is associated with impaired fasting glucose and insulin resistance in Emirati population. Gene. 2019; 10: 681:93-98.
3. **KG Aghila Rani**, Kishore U, Madan T. Mesenchymal stem cells: a promising tool for targeted gene therapy of Endometriosis. Regenerative Medicine. 2017; 12(1):69-76
4. **KG Aghila Rani**, Pandit H, Warty N, Madan T. Adenoviral *sflt-1* engineered human endometrial mesenchymal stem cells effectively regress endometriotic lesions in NOD/SCID mice. Gene Ther. Nature Publishing Group 2016; 23(7):580-91.
5. Pandit H, Thakur G, **KG Aghila Rani**, Dodagatta-Marri E, Patil A, Kishore U, Madan T. Surfactant protein D induces immune quiescence and apoptosis of mitogen-activated peripheral blood mononuclear cells. Immunobiology. 2016; 221(2):310-22.
6. **KG Aghila Rani**, Pandit H, Warty N, Madan T. Endometriotic Mesenchymal Stem Cells Exhibit Distinct Immunophenotype. Int Immunol. 2015 Apr;27(4):195-204.
7. Shanmuga Priyaa Madhukaran, **KG Aghila Rani**, Hrishikesh Pandit, Eswari Dodagatta-Marri, Lubna Kouser, Kaiser Jamil, Fatimah S. Alhamlan, Uday Kishore, Taruna Madan. Expression of surfactant proteins SP-A and SP-D in murine decidua and immunomodulatory effects on decidual macrophage. Immunobiology. 2016 Feb;221(2):377-86.
8. **KG Aghila Rani** and Kartha CC. Effects of epidermal growth factor receptor signaling in cardiosphere-derived cell migration and proliferation. Growth factors 2010; 28:157-65.
9. **KG Aghila Rani**, Jayakumar K, Sankara Sarma P, Kartha CC. Clinical determinants of ckit-positive cardiac cell yield in coronary disease. Asian Cardiovasc Thorac Ann 2009; 17:1-4.

10. **KG Aghila Rani**, Jayakumar K, Srinivas G, Nair RR, Kartha CC. Isolation of ckitpos cardiosphere forming cells from human atrial biopsy. *Asian Cardiovasc Thorac Ann* 2008; 16: 50-56.

Book chapters

1. **KG Aghila Rani** and Taruna Madan. Uterine stem cells and their future therapeutic potential in regenerative medicine. In “Imaging in stem cell transplant and cell-based therapy: techniques and applications”. Springer publishers (In press).
2. Dhanya CR, **KG Aghila Rani**, Kartha CC. VEGF signaling: a therapeutic target for cardiovascular disease. In *Advances in Biochemistry in Health and Disease - Signal Transduction in the Cardiovascular System in Health and Disease*. Anand-Srivastava MB & Srivastava AK ed. Springer publishers: 2008:301-412.

News letters

1. **KG Aghila Rani**. Gender differences matters: Women are more at risk for heart diseases. In “Matters of the Heart”. International Academy of Cardiovascular Sciences (Indian section). Vol 2; No:1 January 2018.
 2. **KG Aghila Rani** and Kartha CC. What’s new in strategies for cardiac regeneration? “In Matters of the Heart”. International Academy of Cardiovascular Sciences (Indian section). Vol 1; No:1 January 2017.
 3. **KG Aghila Rani** and Taruna Madan. Mesenchymal stem cells in pathogenesis of endometriosis. 13th issue of ISSRF society newsletter on Stem Cells and Reproductive Health. 2013; 25-27.
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ACADEMIC HONORS AND AWARDS

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| International travel award (Department of Science & Technology, Govt. of India) - | 2013 |
| ICMR Post-doctorate fellowship (Indian Council for Medical Research) - | 2010 |
| Young Scientist award (Kerala State Council for Science, Technology & Environment) - | 2008 |
| University Second Rank (MSc Biotechnology), Bharatiar University, India - | 2004 |
| University First Rank (BSc Biotechnology), Kerala University, India - | 2002 |
| Certificate of Appreciation (Biotech Consortium India Ltd), Govt. of India- | 2004 |
| Biotechnology scholarship award | 2002 |

PATENT

Taruna Madan, **Aghila Rani KG**, Hrishikesh Pandit, Rambhadur Subedi, Rajashri Shende, Siddhartha Pati, Anil Chatterji. A novel formulation for inducing angiogenic differentiation of the human mesenchymal stem cells (Under process).

SCIENTIFIC PRESENTATIONS

- **KG Aghila Rani**, Neeta Warty, Taruna Madan. “Ectopic Mesenchymal Stem Cells are pro-inflammatory” at the 25th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility, Mumbai, India.
- **KG Aghila Rani**, Neeta Warty, Taruna Madan. “Differential expression of pattern recognition molecules in human endometrial mesenchymal stem cells” at the 15th World Congress on Human Reproduction, Venice, Italy.
- **KG Aghila Rani**, Siddanath Metkari, Neeta Warty, Taruna Madan. “Animal Models of Endometriosis” at the 22nd Annual Meeting of the Indian Society for the Study of Reproduction and Fertility, New Delhi, India
- **KG Aghila Rani**, Neeta Warty, Taruna Madan. “Expression of pattern recognition molecules in human endometrial mesenchymal stem cells” at the 5th Congress of the Federation of Immunological Societies of Asia-Oceania, New Delhi, India.