BIODATA: Dr Sujata Mohanty

NAME: **DR. SUJATA MOHANTY**

POSITION TITLE: **PROFESSOR**

EDUCATION/TRAINING:

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| **Sl. No.** | **INSTITUTION & LOCATION** | **DEGREE AWARDED** | **YEAR** | **FIELD OF STUDY** |
| 1. | Mount Sinai Hospital, New York, USA | Post Doctoral Fellow | 1998 | Platelet Disorders |
| 2. | All India Institute of Medical Sciences (AIIMS), New Delhi, India | Ph.D | 1996 | Biotechnology |
| 3. | Jamia MilliaIslamia, New Delhi, India | M.Sc | 1991 | Bio-Science |

**A. Personal Statement**

After my Post- doctoral research, I joined AIIMS as Scientist-II and later became as a Assistant Professor in 2005. I have been instrumental in setting up this Stem Cell Facility at AIIMS. After taking the charge of the facility in 2005, I initiated basic research using adult and embryonic stem cells. Adult stem cell sources include bone marrow, umbilical cord, adipose tissue, dental pulp, hair and skin follicles. For better understanding of Stem cell biology and drug discovery, iPSC research was initiated at AIIMS. Currently, I am the Professor and Faculty-in-charge of this facility. My facility was considered for Department of Biotechnology-Centre of Excellence (DBT-CoE), Govt. of India grant to further strengthen the basic, pre- clinical and clinical research. With my team of researchers and students we have successfully established the GOOD MANUFACTURING PRACTICES (GMP) FACILITY, in accordance with ICMR- DBT guidelines (Govt. of India) for Stem Cell Research, to manufacture stem cells of clinical grade for patient use.

Currently, my key research areas are Stem cell biology, Immunomodulation, exosomes as cell free therapy and tissue engineering. My team has established animal models for Parkinson’s disease, myocardial infarction, spinal cord injury, alkali eye burn and segmental bone defect. Focus on bench to beside approach with primary targeted disorders like liver fibrosis, myocardial infarct, muscular dystrophy, peripheral vascular disease, cardiomyopathy, retinitis pigmentosa and macular degeneration. We have performed clinical trials using limbal stem cells and oral mucosal stem cells for ocular surface reconstruction and hair follicle derived stem cells for treating vitiligo.

Apart from research, I am involved in teaching and training students at both national and international platforms.

**B. Positions and Honors**

**Position and Employment**

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| **Sl No.** | **InstitutionPlace** | **Position** | **From (Date)** | **To (date)** |
| 1. | AIIMS, New Delhi | Professor | 1st July, 2016 | Till date |
| 2. | AIIMS, New Delhi | Additional Professor | 1st July, 2012 | 30th June 2016 |
| 3. | AIIMS, New Delhi | Associate Professor | 1st July, 2009 | 30th June,2012 |
| 4. | AIIMS, New Delhi | Assistant Professor | 24th Sep, 2005 | 30th June, 2009 |
| 5. | Dept. of Medical Oncology, A.I.I.M.S | Scientist-II | 2002 | 2005 |
| 6. | Dept. of Hematology, A.I.I.M.S | Scientist-II | 1999 | 2000 |

**Honors/Awards**

* **University Grant Commission (UGC) fellowship during Ph.D (1991).**
* **Junior Investigator Prize for best paper (1997).**
* **Post-Doctoral fellowship from Mount Sinai hospital, New York, USA (1998).**
* **Award from International Society for Stem Cell Research, USA (Three times).**
* **AIIMS Excellence Award in recognition of notable published research work. (2012, 2014 & 2015).**
* **Bharat Jyoti Award from India International Friendship Society (2013).**
* **Third price for poster presentation in 15th INDO-US Flow Cytometry Workshop on “STEM CELLS’’, 2014.**
* **ICMR International Fellowship (2014- 2015) for training at Kyoto Prefectural University of Medicine, Kyoto, Japan, in Stem Cells and Scaffolds.**
* **Received IUSSTF Grant twice. (2017; 2019).**

**C. Contributions to Science**

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| **1** | **Member of Institute Committee for Stem Cell Research** | * National Institute of Immunology, New Delhi * Institute of Liver & Biliary Sciences, New Delhi * National Brain Research Centre, Manesar * THSTI, Faridabad * IIT, Indore * University of Delhi * CSIR-Institute of Genomics & Integrative Biology (IGIB) * Indian Spinal Injuries Centre, New Delhi * Kavikrishna Lab IIT – Guwahati * Jamia Hamdard University |
| **2** | **Member: International / National Bodies** | * International Society for Cellular Therapy (ISCT) * International Society for Stem Cell Research (ISSCR) * Society of Biological Chemists (SBC) * Indian Immunology Society * Indian Society of Nanomedicine * Indian Science Congress Association * Stem Cell Research Foundation of India * The Cytometry Society ,India * Indian Society for Translational Research * The Biomedical Engineering Society (BMES) |
| **3** | **Member of Advisory Bodies** | * Core Committee for Stem Cell Donor Registry for Bone Marrow Transplant in India * Stem Cell Donor Registry, Ministry of Science &Family Welfare, Govt. of INDIA * High Powered Committee by Ministry of Health and Family Welfare, Govt. of India * Brainstorming meeting on Biofabrication& 3D Bioprinting * Expert Group Committee- Limbal Stem Cell Transplantation- ICMR * Centre for induced pluripotent Stem Cell Research and Application (CiRA) –For collaboration * Investigating team of CDSCO-Dendritic Cell Vaccine Scandal * Department of Biotechnology Task Force on Bioengineering * DBT Expert Committee for Indo-Australian Career Boosting Gold Fellowships (IACBG-Fellowships) * Technology Development Board, DST * Internal Committee for Sexual Harassment Cell: Redressal of Complaints NII * Institute of Life Sciences, Bhubaneswar * National Centre for Cell Science |
| **4** | **Member- Research Grant Review Committee** | * Project Monitoring Committee (BIRAC), DBT * Biotechnology Career Advancement and Reorientation Program for Women Scientists (BioCare), DBT * Biotechnology Industry Research Assistance Council (BIRAC) * Indian Council of Medical Research, New Delhi * Department of Science and Technology, New Delhi * Council of Scientific and Industrial Research, New Delhi * Peer Review Committee- DRDO-Apollo Hospital, Hyderabad * SPARC (Scheme for Promotion of Academic and Research Collaboration) , Ministry of Human Resource Development, Government of India at IIT-Kharagpur * ANR |
| **5** | **Member- Journal Review Committee** | * Stem Cell Research Open library (SCROL) * Life Science * Journal of Biosciences * Biomedical Research Journal * Insights in Stem Cells * World Journal of Stem Cells * CEINCIA publishing group * Translational Surgery * Molecular and Cellular Biochemistry * Indian Heart Journal * BMC Ophthalmology |
| **6** | **Member- Editorial Committee** | * Journal- Current Trends in Stem cells and Regenerative Medicine (CTSR) * Jacobs Journal of Bone Marrow and Stem Cell Research * Scientific Reports, Nature publishing house * Stroke Research & Treatment * Indian Pediatrics |

**Publications**: **Highest Impact: 18.9) (Avg: 8 publications / year)**

1. Published: Research Papers: 120

**Patents: 08**

1. Received: 01 (Superior and simple method to isolate very small embryonic-like stem cells (VSELs) without the Use of Flow Cytometry: Patent Number 287658)
2. Filed :07

**Book Chapters: 06**

1. Rawat S et al, Mohanty S (2019) Efficient Labeling Of Human Mesenchymal Stem Cells Using Iron Oxide Nanoparticles, Imaging and Tracking Stem Cells: Methods and Protocols-*Springer Nature, Volume 2.(Accepted)*
2. Chaudhuri R et al, **Mohanty S**(2019). Potential of Mesenchymal Stem Cells in Modulating Oxidative Stress in Management of Lung Diseases.Oxidative Stress in Lung diseases. Volume-2(Under Review)
3. Rawat S et al**, Mohanty S** (2019), Mesenchymal Stem Cells Modulate the Immune System in Developing Therapeutic Interventions, *IntechOpen,* DOI: 10.5772/intechopen.80772.
4. **Mohanty S** (2019), Regenerative Medicine. D. Prabhakaran, *Tandon’s Textbook of Cardiology*.
5. **Mohanty S** (2017), Clinical trials of cardiac regeneration using adult stem cells: Current and future prospects, Ashok Mukhopadhyay, *Regenerative Medicine: Laboratory to Clinic*- Springer Nature, Singapore. DOI 10.1007/978-981-10-3701-
6. **Mohanty S**(2016),Cellular Therapy for Ocular Diseases(pp467-478). ThirumurthyVelpandian*, Pharmacology of Ocular Therapeutics*- Springer Nature, New York. DOI 10.1007/978-3-319-25498-2.

**Recent Publications:**

**2019**

1. Sharma P, Jain KG, **Mohanty S**, Pandey P. In vitro degradation behaviour, cytocompatibility and hemocompatibility of topologically ordered porous iron scaffold prepared using 3D printing and pressureless microwave sintering. Materials Science & Engineering C - MSEC\_2019\_1228\_R1 (Accepted)
2. Kakkar A, Nandy SB, Gupta S, Bharagava B, Airan B, **Mohanty S**. Adipose tissue derived mesenchymal stem cells are better respondents to TGFβ1 for in vitro generation of cardiomyocyte-like cells. Mol Cell Biochem. 2019 Jun 21;1–14. DOI: 10.1007/s11010-019-03570-3
3. Midha S, Dalela M, Sybil D, Patra P, **Mohanty S**. Advances in three‐dimensional bioprinting of bone: Progress and challenges. J Tissue Eng Regen Med. 2019 Apr 24;13(6):term.2847. doi: 10.1002/term.2847
4. Parmar V, Changela K, Srinivas B, Mani Sankar M, **Mohanty S**, Panigrahi SK, et al. Relationship between Dislocation Density and Antibacterial Activity of Cryo-Rolled and Cold-Rolled Copper. Materials (Basel). 2019 Jan 9;12(2):200. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6356488/  DOI: [10.3390/ma12020200](https://dx.doi.org/10.3390%2Fma12020200)
5. R Sihota, S Sen, **S Mohanty**, M Ahmad, A Ravi, V Gupta Effect of intracameral human cord blood-derived stem cells on lasered rabbit trabecular meshwork . *International Ophthalmology.* (2019).  [DOI: 10.1007/s10792-019-01120-w](https://doi.org/10.1007/s10792-019-01120-w)
6. Amtoj Kaur, Swati Midha, Shibashish Giri, **Sujata Mohanty**. Functional Skin Grafts: Where Biomaterials meet Stem Cells. *Journal of Stem Cell Internationa* (2019). Volume 2019, Article ID 1286054. DOI: 10.1155/2019/1286054
7. Srilathaa Gunasekaran, Rebika Dhiman, Murugesan Vanathi, **Sujatha Mohanty**, Gita Satpathy, Radhika Tandon. Ocular Surface Microbial Flora in Patients with Chronic Limbal Stem Cell Deficiency Undergoing Cultivated Oral Mucosal Epithelial Transplantation. *Middle East African Journal of Ophthalmology (MEAJO).* (2019) DOI: 10.4103/meajo.MEAJO\_172\_16.

**2018**

1. Kumar S, Jain S, **Mohanty S**, Velpandian T, Mathur R. Journal of Stem Cells Bone Marrow Stromal Cells Improve the Formalin Tonic Pain and Feeding Behavior in the Complete Thoracic Spinal Cord Injury in Rats.;13(4).  
   https://www.ncbi.nlm.nih.gov/pubmed/15144853 DOI:[10.1016/j.expneurol.2004.01.021](https://doi.org/10.1016/j.expneurol.2004.01.021)
2. Raghav D, Takkar B, Sen S, Kashyap S, Gupta D, **Mohanty S**. Experimental evaluation of Plasma treated Poly ε- caprolactone as a substitute for Human Amniotic Membrane. Current Eye Research.   
   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5978129/ DOI:10.1167/iovs.13-1272
3. Sharma N, **Mohanty S**, Jhanji V, Vajpayee RB. Amniotic membrane transplantation with or without autologous cultivated limbal stem cell transplantation for the management of partial limbal stem cell deficiency. Clin Ophthalmol. 2018;12:2103–6. DOI: [10.2147/OPTH.S181035](https://dx.doi.org/10.2147%2FOPTH.S181035)
4. Paliwal S, Chaudhuri R, Agrawal A, **Mohanty S**. Human tissue-specific MSCs demonstrate differential mitochondria transfer abilities that may determine their regenerative abilities. Stem cell research & therapy. 2018 Dec;9(1):298. DOI:10.1186/s13287-018-1012-0
5. Rawat S, Srivastava P, **Mohanty S**, Prabha P, Gupta S, Kanga U. A comparative study on immunomodulatory potential of tissue specific hMSCs: Role of HLA-G. IOSR J Dent Med Sci e-ISSN. 2018;17(6):32–40. DOI: 10.9790/0853-1706143240
6. Gupta S, Rawat S, Arora V, Kottarath SK, Dinda AK, Vaishnav PK, et al. An improvised one-step sucrose cushion ultracentrifugation method for exosome isolation from culture supernatants of mesenchymal stem cells. Stem Cell Res Ther. 2018 Dec 4;9(1):180. DOI: 10.1186/s13287-018-0923-0.
7. Chakraborty J, Roy S, Murab S, Ravani R, Kaur K, Devi S, et al. Modulation of Macrophage Phenotype, Maturation, and Graft Integration through Chondroitin Sulfate Cross-Linking to Decellularized Cornea. ACS Biomater Sci Eng. 2019 Jan 14;5(1):165–DOI: 79. 10.1021/acsbiomaterials.8b00251
8. Parmar V, Kumar A, Sankar MM, Datta S, Prakash GV, **Mohanty S**, Kalyanasundaram D. Oxidation facilitated antimicrobial ability of laser micro-textured titanium alloy against gram-positive Staphylococcus aureus for biomedical applications. J. Laser Appl. 2018 Aug 1;30:032001 DOI: 10.2351/1.5039860
9. Paliwal S, Chaudhuri R, Agrawal A, **Mohanty S**. Regenerative abilities of mesenchymal stem cells through mitochondrial transfer. J Biomed Sci. 2018 Dec 30;25(1):31. DOI: 10.1186/s12929-018-0429-1
10. **Mohanty S**, Jain KG, Nandy SB, Kakkar A, Kumar M, Dinda AK, et al. Iron oxide labeling does not affect differentiation potential of human bone marrow mesenchymal stem cells exhibited by their differentiation into cardiac and neuronal cells. Mol Cell Biochem. 2018 Nov 15;448(1–2):17–26. DOI: 10.1007/s11010-018-3309-9.
11. Narayan R, Agarwal T, Mishra D, Maiti TK, **Mohanty S**. Goat tendon collagen-human fibrin hydrogel for comprehensive parametric evaluation of HUVEC microtissue-based angiogenesis. Colloids Surfaces B Biointerfaces. 2018 Mar 1;163:291–300. DOI: 10.1016/j.colsurfb.2017.12.056
12. Sultana N, Singh M, Nawal RR, Chaudhry S, Yadav S, **Mohanty S**, et al. Evaluation of Biocompatibility and Osteogenic Potential of Tricalcium Silicate–based Cements Using Human Bone Marrow–derived Mesenchymal Stem Cells. J Endod. 2018 Mar 1;44(3):446–51. DOI: 10.1016/j.joen.2017.11.016
13. Kumar S, Jain S, **Mohanty S**, Velpandian T, Sreenivas V, Mathur R. Rat bone marrow stromal cell transplantation ameliorates complete spinal cord injury induced sensorimotor dysfunctions and associated neurotransmitters. <http://nopr.niscair.res.in/handle/123456789/44842>

**2017**

1. Singh M, Gupta S, Rawat S, Midha S, Jain KG, Dalela M, **Mohanty S**. Mechanisms of Action of Human Mesenchymal Stem Cells in Tissue Repair Regeneration and Their Implications. An