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Professional experience :

- **2015-till date; Post-doctoral Researcher**, Cell Conversion Technology Unit, RIKEN Center for Life Science Technologies, Yokohama, Japan
- **2014-2015; Post-doctoral Researcher** in Meshorer Lab, Department of Genetics, The Alexander Silberman Institute of Life Sciences, The Hebrew University of Jerusalem, Israel
- **2013-2014; Senior Researcher Fellow**, Neural Stem Cell biology laboratory, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, India
- **2012-2013; Fulbright Visiting Research Scholar** at Department of Biology, Johns Hopkins University, Baltimore, MD, USA
- **2007-2013; Graduate Research Scholar**, Neural Stem Cell biology laboratory, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, India

Academic Profile:

- **Ph.D. Biotechnology**, (Neural differentiation of embryonic and umbilical cord blood derived mesenchymal stem cells for possible cell replacement therapy in Glaucoma model), Kerala University, India; under the guidance of Dr. Jackson James at Neural Stem Cell biology laboratory, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, India, March 2014.
- **Master of Science in Microbiology**, Dept. of Biotechnology & Microbiology, School of Life Sciences, Kannur University, Kerala, India, 2006, with 77% marks.
- **Bachelor of Science in Biotechnology** with Chemistry and Bioprocess Technology as subsidiaries, University of Calicut, Kerala, India, 2004, with 78% marks.

Awards and Scholarships:

- **PBC Fellowship for outstanding Post-Doctoral Researchers (2014)** by The Planning and Budgeting Committee, Council for Higher Education, Israel.
- **Dr. M. R. Das Career Award (2014)** for noted professional achievements during the graduate research tenure at Rajiv Gandhi Centre for Biotechnology, Kerala, India.
- **Fulbright-Nehru Doctoral Research Fellowship (2012)** for carrying out graduate research in US universities, joined as visiting research fellow in Hattar Lab, Department of Biology, Johns Hopkins University, MD, USA.
- **Rajiv Gandhi Centre for Biotechnology Merit award (2011)** for the best graduate research work presentation, Kerala, India.

- **Indian Council of Medical Research-Junior Research Fellowship-2007** by Government of India for pursuing graduate research in National Institutes of India.
- **University first rank and Gold medalist, M.Sc. Microbiology (2006)**, Dept. of Biotechnology & Microbiology, School of Life Sciences, Kannur University, Kerala, India.

Publications:

- Rasheed, V. A., Sreekanth, S., Dhanesh, S. B., **Divya, M. S.**, Divya, T. S., Akhila, P. K., Subashini, C., Chandrika Sivakumar, K., Das, A. V. and James, J. (2014), Developmental wave of Brn3b expression leading to RGC fate specification is synergistically maintained by miR-23a and miR-374. *Developmental Neurobiology*, 74 (12):1155-1171. IF: 4.189
- Srivastava, N., Venugopalan, V., **Divya, M. S.**, Rasheed, V A., James, J. & Narayan, K. (2013). Neuronal differentiation of embryonic stem cell derived neuronal progenitors can be regulated by stretchable conducting polymers. *Tissue Engineering. Part A*, 19(17-18): 1984-1993. IF : 4.10
- **Divya, M. S.**, Roshin, G. E., Divya, T. S., Rasheed, V. A., Santhoshkumar, T. R., Elizabeth, K. E., James, J. & Pillai, R. M. (2012). Umbilical cord blood-derived mesenchymal stem cells consist of a unique population of progenitors co-expressing mesenchymal stem cell and neuronal markers capable of instantaneous neuronal differentiation. *Stem Cell Research & Therapy*, 3, 1-16. IF : 3.65
- Sobhan, P. K., Seervi, M., Joseph, J., Varghese, S., Pillai, P. R., **Divya, M. S.**, James, J., George, R. E., Elizabeth, K. & Santhoshkumar, T. (2012). Immortalized functional endothelial progenitor cell lines from Umbilical Cord Blood for vascular tissue engineering. *Tissue Engineering Part C: Methods*, 18, 890-902. IF: 4.02
- Indulekha, C. L., Divya, T. S., **Divya, M. S.**, Sanalkumar, R., Rasheed, V. A., Dhanesh, S. B., Sebin, A., George, A. & James, J. (2012). Hes-1 regulates the excitatory fate of neural progenitors through modulation of Tlx3 (HOX11L2) expression. *Cellular and Molecular Life Sciences*, 69, 611-627. IF: 7.04
- Sanalkumar, R., Indulekha, C. L., Divya, T. S., **Divya, M. S.**, Anto, R. J., Vinod, B., Vidyanand, S., Jagatha, B., Venugopal, S. & James, J. (2010). ATF2 maintains a subset of neural progenitors through CBF1/Notch independent Hes-1 expression and synergistically activates the expression of Hes-1 in Notch-dependent neural progenitors. *Journal of Neurochemistry*, 113, 807-818. IF: 4.0
- Jagatha, B*, **Divya, M. S.***, Sanalkumar, R., Indulekha, C. L., Vidyanand, S., Divya, T. S., Das, A. V. & James, J. (2009). In vitro differentiation of retinal ganglion-like cells from embryonic stem cell derived neural progenitors. *Biochemical and Biophysical Research Communications*, 380, 230-235. (*Equal contributions; Highly cited paper) IF: 2.54

Abstracts:

- “RGC differentiation from ES cells: Influence of FGF2 and Notch Signaling”, **Divya M S** , Vayanthodi Abdul Rasheed , Hattar Samer, James Jackson, ARVO 2013 Annual Meeting, Seattle, Washington, May 05 - 09, 2013
- ‘Human Umbilical Cord Blood Derived Mesenchymal Stem Cells with Inherent Neurogenic Potential’, **Divya M S**, Roshin Elizabeth George, Elizabeth K E and Jackson James, 19th Biennial Meeting of the International Society of Developmental Neuroscience (ISDN), TIFR, Mumbai, January 11-14, 2012.
- “Isolation, characterization and neural differentiation of mesenchymal stem cells from umbilical cord blood”, **Divya M S**, T S Divya, E G Roshin, C L Indulekha, K E Elizabeth, T R Santhosh Kumar, Jackson James. 7th International stem cell school in regenerative medicine, Institute of Experimental Medicine, Academy of Science of the Czech Republic, November 2-4, 2009.

- “Development of a cell therapy strategy to treat glaucoma using retinal ganglion cells (RGCs) generated from Embryonic Stem (ES) cells”. **Divya MS**, Divya TS, Sanalkumar RS, Indulekha CL, John Francis, Vidyanand S, Vinodkumar G S& Jackson James Poster presented: The young investigators’ meeting, Estuary Island, Kerala, India, Feb 24-29 2009.

Technical Skills:

- **Animal Cell Culture:**
 - Mouse Embryonic Fibroblast culture, Primary mouse embryonic cortical neuronal culture, primary retinal culture, Maintenance of normal Cell lines such as HEK 293T, IMR-32, HeLa, and RGC-5 cells.
- **Stem cell techniques:**
 - Human embryonic stem cell culture, Establishment and culture of human iPS cells, Differentiation of human ES and iPS cells to different lineages, Mouse embryonic stem cell culture, Transfection and generation of transgenic ES cell lines, neural differentiation of mouse ES cells, Establishment and culture of mouse iPS cells, Intra-vitreous transplantation of stem cells, Mesenchymal stem cell isolation from umbilical cord blood and its culture and neuronal differentiation.
- **Basic molecular biology:**
 - Genomic and Plasmid DNA Isolation, Recombinant DNA technology, RNA isolation and semi-quantitative RT-PCR, ChIP, qPCR, DNA sequencing, Bacterial transformation, Genotyping, ChIP, Western Blotting, Genetic modification by CRISPR/Cas9.
- **Fluorescence and Imaging Techniques:**
 - Cryosectioning, Immunohistochemistry, Generation of fluorescence reporter constructs, FACS analysis and cell sorting, immunocytochemistry and Fluorescence and Confocal microscopy
- **Animal and Behavioral experiments**
 - Generation of NMDA injected glaucoma models, OptoMotry, Y-maze, Morris water maze, Circadian rhythm experiments

Professional Memberships:

- Student member, The Association for Research in Vision and Ophthalmology (ARVO), USA.
- Student member, The Society for Biotechnologists India (SBTI), India.

Language Skills:

- English (Professional working proficiency; TOEFL score: 94)
- Hindi (Native or bilingual proficiency)
- Malayalam (Native or bilingual proficiency)
- Tamil (Limited working proficiency)

References:

Dr. Jackson James. Ph.D
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