

**Dr. Yogita K. Adlakha, Ph.D.**  
**Associate Professor**

**Specialization: Stem Cell Biology, Molecular Biology, Neurobiology, MiRNA mediated gene regulation, Mitochondrial dynamics, Cell Signalling, Stem Cell Models**

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Dr. Yogita K. Adlakha completed her PhD from CSIR-Institute of Genomics and Integrative Biology (IGIB), Delhi. In her PhD work, she illustrated the functional role of small non-coding RNAs in apoptosis and cancer and revealed the mechanistic details of microRNA induced apoptosis in cancer cells. After PhD, she worked as Assistant Professor (Adhoc) at Maitreyi College, University of Delhi. Later, she joined CSIR-IGIB as postdoctoral fellow and worked on studying the regulation of cholesterol and lipid metabolism by microRNAs in cancer cells. In 2014, she was awarded with DST INSPIRE Faculty title and a highly competitive research grant and joined National Brain Research Centre (NBRC), Manesar as DST INSPIRE Faculty. Dr. Adlakha investigated the role of microRNAs in reprogramming of somatic cells into induced pluripotent stem cells. She received NIH Post-doctoral visiting fellowship and joined National Eye Institute, National Institutes of Health (NIH) as Post-doctoral visiting fellow at Bethesda, MD, USA, where she worked on understating the pathogenesis of retinal degenerative diseases using patient derived stem cells and 3D retinal organoids. After completing DST INSPIRE Stint at NBRC, she joined Translational Health Science and Technology Institute, Faridabad as Research Scientist. Later, she was awarded with SERB Research Scientist grant and fellowship.

Her research interests include understanding of brain development; dysfunction and disease using human stem cell based 2D and 3D *in vitro* models. One of the research goals is to understand the influence of micronutrient deficiency on fetal brain development. Another research aim is to deconstruct the posttranscriptional regulation of human brain development.

#### **Ongoing Research Projects:**

1. SERB Research Scientist Award on “Exploring the molecular circuitry of human brain development” funded by SERB-DST
2. SERB Women Excellence Award on “Investigating the micronutrient signaling in fetal neuronal development” funded by SERB-DST

#### **Honours and awards:**

1. EMBO Travel and Oral Presentation Award, India Embo conference, inStem, Bengaluru (2023)
2. SERB Women Excellence Award, from Science and Engineering Research Board, Government of India (2022)
3. Tulsabai Somani Educational Trust Award by Indian Academy of Neurosciences (IAN) (2020)
4. Young Associate, Indian Academy of Sciences (IASc), Bengaluru, India (2020)
5. Life time member, Indian Academy of Neurosciences (IAN), India

6. Young Scientist Platinum Jubilee Award, from National Academy of Sciences (NASI), Allahabad, India (2018)
7. NIH Postdoctoral Visiting Fellowship, National Eye Institute, National Institutes of Health (NIH), Bethesda, MD, USA (2015-2017)
8. DST INSPIRE Faculty award, Department of Science and Technology (DST), Government of India, India (2014-2020)
9. Oral presentation award at 4<sup>th</sup> International Conference on Stem Cells & Cancer, Mumbai, India (2013)
10. Sitaram Joglekar award for Young Investigator at 32<sup>nd</sup> Annual Convention of Indian Association for cancer research, Delhi, India (2013)
11. Foreign Travel Grant, Department of Science and Technology (DST), Government of India, India (2012)
12. Senior Research Fellowship, Council of Scientific and Industrial Research (CSIR), Government of India, India (2009)
13. Qualified CSIR-UGC NET for lecturer ship in life sciences (2007)

### Teaching Courses:

Stem Cell Biology, Tissue Engineering, Developmental Biology, Cell Biology, Molecular Biology, Neurobiology and other related courses.

### Selected Publications:

1. **Yogita K Adlakha**. Human 3D brain organoids: steering the demolecularization of brain and neurological diseases. *Cell Death and Discovery*, 2023, Jul 3;9(1):221. **(I.F. 7.11)**
2. Ke Jiang\*, Anupam K Mondal\*, **Yogita K Adlakha**.....Robert S Balaban, Raul Covian, Anand Swaroop. Early mitochondrial stress and metabolic imbalance lead to photoreceptor cell death in retinal degeneration. *Human Molecular Genetics*, 2022 Jan 24;ddac013. bioRxiv, 1/1/2021, <https://doi.org/10.1101/2021.10.10.463827>. \* equal co-first. **(Impact Factor: 6.15)**
3. Asha S. Channakkar#, Tanya Singh, Bijay Pattnaik, Pankaj Seth, **Yogita K. Adlakha**##\*. MiRNA-137-mediated modulation of mitochondrial dynamics regulates human neural stem cell fate. *STEM CELLS*. 2020, May;38(5):683-697. \*Corresponding Author. # Equal Contribution as first author. **(Impact Factor: 6.3)**  
Our work made headlines, “NBRC scientists pave the way for a better understanding of Autism” in Hindu Business Line and Vigyan Prasar “India Science Wire” and BioTecNika. Selected for **Cover Page** of journal.  
Department of Science and Technology highlighted our research on social media. Ministry of Science and Technology also released a report. India today and several other online news channels also published and highlighted our research.
4. Kaya KD, Chen HY, Brooks MJ,..... **Adlakha YK**, Welby E, Swaroop A. Transcriptome-based molecular staging of human stem cell-derived retinal organoids uncovers accelerated photoreceptor differentiation by 9-cis retinal. *Molecular Vision*, 2019; 25:663-678. Preprint, bioRxiv 733071. **(Impact Factor: 2.4)**.
5. Bhagat R, Prajapati B, Narwal S, Agnihotri N, **Adlakha YK**, Sen J and Seth P. Zika Virus E protein alters properties of human fetal neural stem cells by modulating microRNA

- circuitry. Cell Death and Differentiation, 2018, Nov;25(10): 1837-1854. (**Impact Factor: 15.8**).
6. Swaroop S, Mahadevan A, Shankar SK, **\*\*Adlakha YK**, Basu A. HSP60 critically regulates endogenous IL-1 $\beta$  production in activated microglia by stimulating NLRP3 inflammasome pathway. Journal of Neuroinflammation, 2018 Jun 9;15(1):177. doi: 10.1186/s12974-018-1214-5. **\*\*Co-corresponding Author. (Impact Factor: 8.3)**.
  7. **\*Adlakha YK** and Seth P. The expanding horizon of MicroRNAs in Cellular reprogramming. Progress in Neurobiology. 2017 Jan;148:21-39. **\*Corresponding Author. (Impact Factor: 14.2)**.
  8. **\*\*Adlakha YK** and Saini N. MicroRNA: a connecting road between apoptosis and cholesterol metabolism. Tumor Biology 2016 Jul;37(7):8529-54. **\*\*Co-corresponding Author. (Impact Factor: 3.05)**.
  9. Swaroop S, Sengupta N, Suryawanshi AR, **Adlakha YK \*\***, Basu A. HSP60 plays a regulatory role in IL-1 $\beta$ -induced microglial inflammation via TLR4-p38 MAPK axis. Journal of Neuroinflammation. 2016 Feb 2;13:27. doi: 10.1186/s12974-016-0486-x. **\*\*Co-corresponding Author. (Impact Factor: 8.3)**.
  10. **Adlakha YK** and Saini N: Brain MicroRNAs and insights into biological functions and therapeutic potential of brain enriched miRNA-128. Molecular Cancer, 13:33, Feb 21, 2014. (**Impact Factor: 27.7**).
  11. **Adlakha YK**, Saini N: MicroRNA-128 downregulates Bax and induces apoptosis in human embryonic kidney cells. Cellular and Molecular Life Sciences, 2011 Apr;68(8):1415-28. Epub 2010 Sep 19. (**Impact Factor: 9.3**).