

Dr. Ashish Ambadas Deshmukh

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Educational Qualification:

Ph.D. (Zoology : Cell Biology): 2006 Shivaji University, Kolhapur.

NET : 2001 UGC-CSIR New Delhi

SET: 2001 UGC- University of Pune

M.Sc. (Zoology) : 1998 Distinction-First merit

B.Sc. (Zoology) : 1996 Distinction- First in the college for three years of B.Sc.

Research Interests:

- Basic understanding of Process of Neurodegeneration,
- Cell stress response and Hormesis,
- Cell senescence and aging,
- Interventions to slow down the process of Neuronal aging.

Expertise:

- Animal Cell culture,
- Neuronal cell culture,
- Immunocytochemistry,
- Karyotyping and Fluorescence *In Situ* Hybridization (FISH)
- Separation techniques,
- Blotting techniques.
- Antimicrobial sensitivity assays
- Sperm function tests

In what way we can collaborate?

- Animal studies focusing on Neurodegeneration,
- In vitro studies related to cell stress response,
- In vitro studies related to Viability and Cytotoxicity,
- In vitro studies related to apoptosis,
- In vivo and in vitro studies related to stress response and hormesis.

Teaching Experience:

Professor: 16/3/2017 onwards Department of Zoology, SUK.

Associate Professor: 16/3/2014 to 15/3/2017 Department of Zoology, SUK.

Assistant Professor: 1/2/2011 to 15/3/2014 Department of Zoology, SUK.

Assistant Professor: 1/7/2008 to 31/1/ 2011 Department of Zoology, Rajaram College, Kolhapur.

Assistant Professor: 30/7/2001 to 30/6/2008 Department of Zoology, Govt. Vidarbha Institute of Science and Humanities, Amravati.

Research Projects:

- Title: Effects of caloric restriction mimetic 2'deoxy glucose on molecular markers of cognitive function: Glycogen synthase kinase3 β (GSK3 β), cyclin dependent kinase5 (cdk5), reelin and phosphorylated Tau (pTau) in mouse primary cultured hippocampal neurons.
Funding Agency: DST-Cognitive Science Research Initiative; New Delhi.
Grant: Rs. 26.59 lacs
Duration: 3.5 years (16 April 2012 to 15 October 2015)
- Title: Hormetic effects of dietary restriction on preservation of cytoarchitecture of mouse cortical and hippocampal neurons to youthful conditions during ageing.
Funding Agency: UGC, New Delhi.
Grant: Rs. 12 Lacs
Duration: 3 years (1 July 2012 to 30 June 2015)
- Title: Effect of mild heat stress on localization and expression of Sirt1 and Hsp70 in the primary culture of mouse prefrontal cerebrocortical neurons.
Funding Agency: Shivaji University, Kolhapur under Research Strengthening Scheme
Grant: Rs. 2.75 lacs
Duration: 2 Years 1 July 2019 to 30 June 2021

No. of M.Phil. and Ph.D. students Produced:

M.Phil. :	One
Ph.D. :	Four
Working:	Two

Courses Taught:

Cell and Molecular Biology
Physiological Chemistry
Genetics
Animal cells in Biotechnology
Molecular Biology of the Gene
Computational molecular Biology
Developmental Biology
Cell pathology

Responsibilities shouldered:

- Member Secretary of institutional animal Ethics Committee, Shivaji University, Kolhapur.
- In Charge Scientist of Animal House Facility, Shivaji University, Kolhapur.
- In Charge of Departmental Library, Department of Zoology, SUK.
- Departmental Coordinator of UGC-NET coaching Scheme.
- Member of various committees of the Department.

Participation in Workshops and Training programs:

- Participated in Hands on training program on “Cellular and Molecular Biology- from Gene cloning to protein Expression and Localization” at University of Mumbai- Department of Atomic Energy: Centre for Excellence in Basic Sciences, 19 to 22 Nov 2018.
- Participated in eight days faculty development program in “Genome editing tools and applications” at University of Delhi New Delhi from 15 to 22 Jan 2018.
- Participated in a “Training program in GC-MS/MS” held on 20-21 November 2017 at University Science Instrumentation Centre (USIC), Shivaji University, Kolhapur.
- Participated in “One week Hands-on training course in Human Karyotyping and FISH(Fluorescence In Situ Hybridization)” at Department of assisted Reproduction and Genetics, Jaslok Hospital, Mumbai; affiliated to University of Mumbai from 23 to 28 May 2011.
- Participated in the Workshop on “Microbes in rodent colonies” organized by Advanced Centre for Treatment, Research and Education in Cancer (ACTREC) Mumbai from 13-15 December 2007.
- Participated in the One-day workshop on “SPSS package for Statistical analysis” organized by ICFAI College Amravati on 25th September 2005
- Participated in the Workshop on “Experiments in Molecular Biology” organized by Bangalore Genei, Bangalore and Department of Zoology, Amravati University, at Department of Zoology, Amravati University, Amravati on 1-2 Aug 2004.

Publications:

- Mane NR, Gajare KA and **Deshmukh AA** (2020). Hormetic effects of mild heat stress on the primary culture of mouse prefrontal cerebrocortical neurons *The Journal of Basic and Applied Zoology*, 81:25 (**Springer Nature**).
- Mane NR, Gajare KA and **Deshmukh AA** (2019). Beneficial effects of mild heat stress on the primary culture of mouse prefrontal cerebrocortical neurons. *Res J Biotech*, 14(9):69-76.

- Mane NR, Gajare KA and **Deshmukh AA** (2019). Primary culture of mouse prefrontal cerebrocortical neurons. *International journal of Research and analytical Reviews*, 6(1), 941-948.
- Babar S, Gavade N, Shinde H, Mahajan P, Lee KH, Mane N, **Deshmukh A**, Garadkar K and Bhuse V (2018). Evolution of Waste Iron Rust into Magnetically Separable g-C₃N₄-Fe₂O₃ Photocatalyst: An Efficient and Economical Waste Management Approach. *ACS Applied Nano Materials*, 1(9);4682-94 (**American Chemical Society publishing journal**).
- Mane NR, Gajare KA and **Deshmukh AA** (2018). Mild heat stress induces hormetic effects in protecting the primary culture of mouse prefrontal cerebrocortical neurons from neuropathological alterations. *IBRO reports*, 5: 110-115.
- Mane NR, Patil AD, Pawar PR, Shidvankar SY, Thorvat TR, Gajare KA and **Deshmukh AA** (2018). Effect of Ultraviolet C radiations on polytene chromosome and development of *Drosophila melanogaster*. *International Journal of Innovative Research and Review*, 6(1): 42-52.
- Mane NR, Sutar SS, Pharande AD, Patil PB, Patil SS, Gajare KA and **Deshmukh AA** (2017). Effect of Shakti drops® on lipid peroxidation and antioxidant enzymes in various organs of swiss albino mice *Mus musculus*. *International journal of Pharmacy and therapeutics*, 8(4) 189-194.
- Pardeshi MH, **Deshmukh AA** and Gajare KA(2017). *Ruellia tuberosa* linn. acts as anti-fertility agent that reduces sperm count, motility and viability in male Swiss albino mice (*Mus musculus*). *Int. J. Curr. Pharm Res.* 9(1):105-109.
- **Deshmukh AA** (2016). Hikaryo XL™ confers protection during hypocapnic Stress in the primary culture of mouse dermal Fibroblasts. *International Journal of Innovative Research and Reviews*, 4(3):81-89.
- **Deshmukh AA** (2016). Explant culture derived mouse primary fibroblasts tolerate CO₂ fluctuations in HikaryoXL™ medium. *CIBTech Journal of Zoology*, 5(3):71-75.
- Gajare KA and **Deshmukh AA** (2016) Anti-lipid peroxidative effect of aerial parts of *Cynodon dactylon* in *Drosophila melanogaster* *Int. J. Biol Pharm Res.* 7(12): 360-363.
- Udugade RM, **Deshmukh AA** and Gajare KA (2016) Dietary Restriction initiated from larval decreases maximum life span in *Drosophila melanogaster*. *IOSR J Pharm Bio Sci.* 11(6) Ver V:37-42.
- Pathan KH Gajare KA and **Deshmukh AA** (2016) Mouse cerebral cortex is more vulnerable to age related deposition of senile plaques than the hippocampus: a neuropathological study of amyloid plaques in the normal process of brain aging *Acta Biomedica Scientia*, 3(1):32-37.

- Pathan KH, Gajare KA and **Deshmukh AA** (2015). Ultrastructural study reveals that mouse hippocampal neurons are more protected than the cerebrocortical neurons from age related cytological alterations. *Cell Science and Report MOJ Cell Sci Rep* 2(5): 00039 DOI: 10.15406/mojcsr.2015.02.00039
- Pathan KH, Gajare KA and **Deshmukh AA** (2015). Cytopathological study of neurofibrillary tangles in cerebral cortex and hippocampus of swiss albino mouse: *Mus musculus*. *J Pharma Biol*, 5(4): 314-319.
- Caloric restriction mimetic 2-deoxyglucose maintains cytoarchitecture and reduces tau phosphorylation in primary culture of mouse hippocampal pyramidal neurons. *In Vitro Cell Dev Biol Anim*. 51(6): 546-55.
- Pathan KH, Yadav RB, Gajare KA and **Deshmukh AA** (2014). Effect of 40% dietary restriction on Periodic Acid Schiff (PAS) positive material and cytoplasmic lipid staining in the mouse hepatocytes *Indian Journal of Fundamental and Applied Life Sciences* 4(4) :465-469.
- Chaudhari VH, **Deshmukh AA** and Gajare KA (2013). Turbidimetric assay reiterates the bacteriostatic action of *Centella asiatica* against *E. coli*, *B. subtilis* and *S. mutans*. *Indian Journal of Fundamental and Applied Life Sciences* 3(4):369-373.
- **Deshmukh AA** (2013). Primary neuronal culture is the best model to study cytological changes during neuronal development and degeneration. *Cibtech Journal of Bioprotocols* 2(2): 33-38.
- Chaudhari VH, **Deshmukh AA** and Gajare KA (2013). Evaluation of antibacterial property of *Centella asiatica*. *Indian Journal of Fundamental and Applied Life Sciences* 3(2): 268-278.
- **Deshmukh AA** (2012). Rat hepatocytes maintained at a refrigerating temperature for one week exhibit a high Degree of viability. *CIBTech Journal of Biotechnology* 2(3): 64-68.
- Zombade KA, Gajare KA and **Deshmukh AA** (2011). Effect of fresh leaf juice of *Piper betle* on *Streptococcus mutans* and *Candida albicans*. *International Journal of Food, Agriculture and Veterinary Sciences* 1(1): 88-91.
- Zombade KA, Gajare KA and **Deshmukh AA** (2011). Antibacterial activity of fresh leaf juice of *Piper betle* against *Escherichia coli*, *Bacillus subtilis* and *Staphylococcus aureus*. *Indian J Fundamental and Applied Life Sciences*. 1(4):391-396.
- Gajare KA and **Deshmukh AA** (2010). Phylogenetic analysis of enzyme aromatase in Selected species of reptiles. *J Cell Tissue Res*, 10(1) 2169-2171
- Theng AD, Gajare KA and **Deshmukh AA** (2009). Protective effects of *in vitro* supplementation of ascorbic acid on plasma membrane, acrosomal membrane and

mitochondrial activity index of human spermatozoa. *Current trends in biotechnology and pharmacy*, Vol 3(3) 291-296

- Gajare KA and **Deshmukh AA** (2008). Effect of ethanolic extract of *Bacopa monniera* (Linn.) on longevity and lipofuscinogenesis in *Drosophila melanogaster*. *Int. J. Pharmacol. Biol. Sci*, 2(3): 85-93
- Gajare KA, Gujar NS, Diwan PD, Bansod MA, Wadekar HR and **Deshmukh AA** (2008). Alterations in lipid peroxidation and superoxide dismutase activity during growth phase of *Lymnaea luteola* (L). *J. Cell Tissue Res*. 8(2): 1347-1350
- **Deshmukh AA**, Gajare K A and Pillai MM. (2007). Protective effects of ethanolic extracts of *Lactuca sativa* Linn. (lettuce) on neuronal lipofuscinogenesis in D-galactose induced ageing accelerated female albino mice. *J. Herb. Med. Toxicol*, 1(1):69-76.
- Gajare KA, **Deshmukh AA** and Pillai MM (2007). Neuroprotective effect of *Bacopa monniera* Linn. Extract on lipofuscinogenesis and fluorescence product in the brain of D-galactose induced ageing accelerated mice. *J. Cell Tissue Res*, 7 (2): 1167-1172.
- Theng AD, Gajare KA and **Deshmukh AA** (2007). Effects of *in vitro* supplementation of α tocopherol on structural and functional integrity of Human spermatozoa. *J. Cell Tissue Res*. 7 (2):1161-1165
- **Deshmukh AA**, Gajare KA, Bele MS, Solanke MR, Deshmukh VP (2007). Evaluation of antibacterial property of fresh leaf juice of *Tridax procumbens* : an *in vitro* study. *J Cell Tissue Res*. 7 (2):1123-1129.
- **Deshmukh AA**, Gajare, KA and Pillai MM (2007). Neuroprotective effects of lettuce(*Lactuca sativa* Linn) in D Galactose induced ageing in female albino mice. *J Cell Tissue Res*. 7 (1):997-1002
- Gajare KA, **Deshmukh AA** and Pillai MM (2006). Protective effect of *Bacopa monniera* on the brain of D-galactose induced aging in female albino mice. *Indian J Gerontol* 20(3):181-192.
- Gajare KA, **Deshmukh AA** and Pillai MM (2006). Effect of *Bacopa monniera* extract on lysosomal membrane integrity in the brain and heart of D-Galactose induced oxidative stressed mice. *J. Cell Tissue Res*. 6 (2):815-818.
- **Deshmukh AA**, Gajare KA, Pullajwar VS, Ruikar AA and Bule PP (2006). Correlation between oxidative stress and type II diabetic patients. *J. Cell Tissue Res*. 6 (2):757-761.
- **Deshmukh AA**, Gajare KA and Pillai MM (2006). D-Galactose induced ageing in short duration: A quick model of accelerated ageing in mice. *J. Cell Tissue Res*. 6 (2):753-756.
- **Deshmukh AA**, Gajare KA and Pillai MM (2006). Effect of D galactose on lipofuscinogenesis in the brain of female albino mice. *J. Cell Tissue Res*, 6 (1):647-650.

- Gajare KA, **Deshmukh AA**, Mehwish S, Parveen S, Zombade S, Jayale S and Shahista P (2005). Effect of Ashwagandha (*Withania somnifera*) root powder on lipid peroxidation in *Drosophila melanogaster*. *Indian J Gerontol*, 19(3):265-272.
- Pillai MM, **Deshmukh AA** and Gajare KA (2004). Effect of Aflatoxin B1 on mice liver. *Perspectives in Cytology and genetics*, 11:205-213.
- Pillai MM, Pawar SS and **Deshmukh AA** (2001). Hypoglycemic effect of sialoadenectomy in mice. *J Endocrinol Reprod*, 5(2): 51-58.

Awards:

- Best Paper presentation award during the national Conference in Life sciences, held on 22-23 Jan 2019 organized by Department of Zoology, SGB Amravati university, Amravati.
- Best Paper presentation award during the international Conference Nanotechnology addressing the convergence of material Science, Biotechnology and Medical Science held on 9-11 November 2017, organized by D.Y. Patil Deemed to Be University, Kolhapur.
- Travel award during the World Neurocongress-2017 an International Conference on Neurogenomics and stem Cell therapy held on 9-10 Dec 2017 organized by JN Medical College, Aligarh Muslim university Aligarh and Indian Academy of Neurosciences.
- Best Paper presentation award during the International Conference in Public Mental Health and Neurosciences, held on 18-19 Dec 2014 organized by Jain University, Bengaluru.
- Mahatma Phule and Dr. Babasaheb Ambedkar award of the year 2007-08 by Govt. Vidarbha Institute of Science and humanities, Amravati on 26 Apr 2008.
- Merit award from Shivaji university Kolhapur for the first merit in M.Sc. Zoology
- Ekalavya Merit Scholarship from Govt. of Maharashtra during post graduate education (1996-98).
- Merit awards from D.B.F. Dayanand College of Arts and Science, Solapur during 1994, 1995 and 1996 for securing first rank in the college in Biological subjects.