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**Professional Research Page**

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## Dr. Mukesh Tanwar

### Current Status:

Working as an **Assistant Professor** in Department of Genetics, Maharshi Dayanand University, Rohtak, Haryana

### Educational Qualifications:

- **Ph.D:** October 2010 from AIIMS, New Delhi, India.  
**Thesis title:** Mutation analysis in Congenital Glaucoma.
- **Post-Graduation:** Master of Science (M.Sc) in **Genetics** from Department of Bio Sciences, Maharshi Dayanand University, Rohtak, Haryana, India in 2004
- **Bachelor of Education:** Bachelor of Education (B.Ed.) from Maharshi Dayanand University Rohtak, Haryana in 2002.
- **Bachelor of Science:** Bachelor of Sciences (B.Sc.) with Botany, Zoology and Chemistry as subjects from Maharshi Dayanand University, Rohtak, Haryana, India in July 2001.

### Ongoing Research Projects:

1. Research Project entitled “**Juvenile Open Angle Glaucoma : An Exploratory Study**” sanctioned from Indian Council of Medical Research New Delhi (Sanctioned date 23<sup>rd</sup> February 2017)

### Work Experience:

1. **Assistant Professor** at **Department of Genetics, Maharshi Dayanand University, Rohtak, Haryana** from August 3<sup>rd</sup> 2012 **till date**
2. **Post-Doctoral Visiting Fellow** at **National Institutes of Health, Bethesda MD, USA** from **May 2011 – July 2012**
3. **Senior Research Fellow** (ICMR Project) from 13<sup>th</sup> Feb. 2010 to May 2011 at All India Institute of Medical Sciences (**A.I.I.M.S**), New Delhi
4. **Senior Research Fellow** (SRF) and PhD Scholar from 13<sup>th</sup> Jan. 2007 to 12<sup>th</sup> Jan. 2010 at **A.I.I.M.S**, New Delhi
5. **Junior Research Fellow** (JRF) and PhD Scholar from 13<sup>th</sup> Jan. 2005 to 12<sup>th</sup> Jan. 2007 at **A.I.I.M.S**, New Delhi

### Orientation/Refresher Courses:

1. Participated and completed three weeks **Refresher's Course** entitled "**High Impact Teaching Strategies/Teaching Methodology**" organized by Faculty Development Centre, M.D.U. Rohtak from 15th May to 4th June 2019.
2. Participated and completed one week "**Training Programme on E-Learning Technologies**" organized by Faculty Development Centre, M.D.U. Rohtak from 18th July to 24th July 2019
3. Participated and completed **92<sup>nd</sup> Orientation Course** at Jawaharlal Nehru University (JNU) New Delhi from 10<sup>th</sup> November 2014 to 5<sup>th</sup> December 2014 at Academic Staff College (ASC) JNU New Delhi
4. Participated and completed **Refresher Course in Environmental Studies (ID)** on the theme "Environment Awareness, Disaster Management and Sustainable Development," organized by UGC-HRDC B.P.S. Mahila University, Khanpur Kalan, Sonapat, Haryana from 1<sup>st</sup> July 2016 to 22<sup>nd</sup> July 2016 (Reference No. **UGC/HRDC/16/2RCEVSID/20**)

### Research Publications in PubMed Indexed Journals

1. Li L, Chen Y, Jiao X, Jiang D, Jin C, **Tanwar M**, Ma Z et al. Homozygosity mapping and Genetic Analysis of Autosomal recessive Retinal Dystrophies in 144 consanguineous Pakistani Families. **Invest Ophthalmol Vis Sci.** 2017 Apr 1;**58(4):2218-2238**. doi: 10.1167/iovs.17-21424. [PMID: 28418496] **Impact Factor: 3.388**
2. Shah BM, Dada T, Panda A, **Tanwar M**, Bhartiya S, Dada R. Novel occurrence of axenfeld: Rieger syndrome in a patient with blepharophimosis ptosis epicanthus inversus syndrome. **Indian J Ophthalmol.** 2014 Mar;62(3):358-60. doi: 10.4103/0301-4738.121144. [PMID: 24722273] **Impact Factor: 0.961**
3. Kumar M, **Tanwar M**, Faiq MA, Pani J, Shamsi MB, Dada T, Dada R. Mitochondrial DNA nucleotide changes in primary congenital glaucoma patients. **Mol Vis** 2013; 19:220-230 [PMID: 23401651] **Impact Factor: 2.219**
4. Mohanty K, **Tanwar M**, Dada R, Dada T. Screening of the LTBP2 gene in a north Indian population with primary congenital glaucoma. **Mol Vis** 2013; 19:78-84 [PMID: 23378721] **Impact Factor: 2.219**
5. **Tanwar M**, Kumar M, Nayak B, Pathak D, Sharma N, Titiyal JS, Dada R. VSX1 gene analysis in keratoconus. **Mol Vis** 2010; 16: 2395-2401 [PMID: 21139977]
6. **Tanwar M**, Kumar M, Dada T, Sihota R, Dada R. MYOC and FOXC1 gene analysis in primary congenital glaucoma. **Mol Vis** 2010;16:1996-2006 [PMID:21031026]
7. **Tanwar M**, Dada T, Dada R. Axenfeld-Rieger syndrome associated with congenital glaucoma and cytochrome P4501B1 gene mutations. **Case Reports in Medicine** vol. 2010, Article ID 212656, 6 pages, 2010. doi:10.1155/2010/212656. [PMID:20827438]
8. **Tanwar M**, Dada T, Sihota R, Dada R. Mitochondrial DNA analysis in primary congenital glaucoma. **Mol Vis** 2010;16:518-533. [PMID: 20361014]
9. **Tanwar M**, Dada T, Sihota R, Dada R. Identification of four novel CYP1B1 mutations

- (p.I94X, p.H279D, p.Q340H and p.K433K) in Congenital Glaucoma patients. **Mol Vis** 2009; 15:2926-2937 [PMID: 20057908]
10. **Tanwar M**, Dada T, Sihota R, Yadav U, Das TK, Dada R. Mutation spectrum of CYP1B1 in North Indian congenital glaucoma patients. **Mol Vis** 2009;15:1200-1209 [PMID:19536304]
  11. **Tanwar M**, Sihota R, Dada T, Gupta V, Das TK, Yadav U, Dada R. Sturge-Weber syndrome with CYP1B1 mutations and severe trabecular dysgenesis. **J Glaucoma**. 2010 Aug;19(6):398-404 doi: 10.1097/IJG.0b013e3181c4ae74 [PMID: 20051892]
  12. **Tanwar M**, Kumar R, Gadia R, Goyal A, Kumar M, Singh G, Dada T, Dada R. Rieger syndrome with multiple chromosome breaks and chromosome 4 deletion. **BMJ Case Rep**. 2009;2009. pii: bcr06.2008.0297. Epub 2009 Feb 16 [PMID:21686867]
  13. Kumar M, Kumar R, **Tanwar M**, Ghose S, Kaur J, Dada R. Cytogenetic and clinical assessment of a family with Treacher Collins Syndrome (TCS). **Case Reports in Medicine** 2011;2011:708450. Epub 2011 Jun 23. [PMID: 21765846]
  14. Kumar K, **Tanwar M**, Naithani P, Insaan R, Garg S, Venkatesh P, Dada R. PAX6 gene analysis in irido-fundal coloboma. **Mol Vis** 2011;17:1414-[PMID: 21655361]
  15. Kumar M, **Tanwar M**, Saxena R, Sharma P, Dada R. Identification of novel mitochondrial mutations in Leber's hereditary optic neuropathy. **Mol Vis**. 2010; 16:782-792 [PMID: 20454697]
  16. Shamsi MB, **Tanwar M**, Venkatesh S, Dhawan A, Singh G, Mukherjee S, Malhotra N, Kumar R, Gupta NP, Mittal S, Dada R. Comet assay: A prognostic tool for DNA integrity assessment in infertile men opting for Assisted Reproduction. **Indian J Med Res**. 2010;131;675-681. [PMID: 20516540]
  17. Shamsi MB, Venkatesh S, **Tanwar M**, Talwar P, Sharma RK, Dhawan A, Kumar R, Gupta NP, Malhotra N, Singh N, Mittal S, Dada R. DNA integrity and semen quality in men with low seminal antioxidant levels. **Mutat Res** 2009 Jun 1;665(1-2):29-36 [PMID:19427508]
  18. Kumar R, Sunderajan V, **Tanwar M**, Shamsi MB, Gupta NP, Sharma RK, Talwar P, Dada R. Oxidative Stress and sperm mitochondrial DNA mutation in Idiopathic oligoasthenozoospermic men. **Indian J Biochem Biophys** 2009;46:172-177. [PMID:19517995]
  19. Kumar R, **Tanwar M**, Ammini AC, Kumar R, Gupta NP, Sharma RK, Dada R. Robertsonian Translocation and their role in Pathogenesis of Recurrent IVF Failure. **Med Sci Monit**. 2008;14(12):CR617-20. [PMID: 19043369]
  20. Dada R, Kumar R, Shamsi MB, **Tanwar M**, Pathak D, Venkatesh S, Kumar M, Singh H, Singh K, Aron M, Kumar R, Gingh G, Sharma RK, Gupta NP. Genetic screening in couples experiencing recurrent assisted procreation failure. **Indian J Biochem Biophys** 2008;45:116-120. [PMID:21086725]

### Research Publications in other indexed/Referred Journals

1. Rima Dada, Shiv Basant Kumar, Madhuri Tolahunase, Swetasmita Mishra, Kuldeep Mohanty and **Tanwar Mukesh**. Yoga and Meditation as a Therapeutic Intervention in Oxidative Stress and Oxidative DNA Damage to Paternal Genome. **J Yoga Phys Ther**

2015:5:217. doi:10.4172/2157-7595.1000217

2. Dada R, Venkatesh S, Kumar M, Kumar R, **Tanwar M**, Pathak D, Sharma A, Shamsi MB. New perspectives on the genetics of male infertility. **Arch Med Sci** 2009; 5, 1A: S84-S91
3. Venkatesh S, Riaz AM, Shamsi MB, Tanwar M, Kumar R, Gupta NP, Dada R. Oxidative Stress- a marker of male infertility. **Obs & Gynae Today** 2009;Vol. XIV No.1:34-36
4. Shamsi MB, Venkatesh S, Tanwar M, Talwar P, Sharma RK, Mukherjee, Kumar R, Gupta NP, Malhotra N, Mittal S, Dada R. **Obs & Gynae Today** 2008: Vol. XII No.9: 388-390
5. Major Review: Genetics of common ocular disorders. **Delhi Journal of Ophthalmology** 2007;Vol. Vol 12 No. 4:31-40
6. Dada R, **Tanwar M**, Dada T, Goyal A, Idris G, Pathak D, Gupta V, Sihota R, Panda A. Genetics of Glaucoma. **DOS Times**, 2007, Vol. 13, No. 5, 15-24.
7. Shamsi M B, **Tanwar M**, Dada R, Kumar R, Kumar R, Sharma R.K. and Kucheria K. Mosaic Status of Lymphocytes in Infertile Men with Klinefelter Syndrome. **Int J Hum Genet**, (2007) 07(2): 133-136
8. Dada R, Kumar R, Shamsi MB, Idris G, **Tanwar M**, Tomar D, Kumar R, Kucheria K. Occupational Environmental Factors and male infertility. **Embryo Talk** Vol 1, supplement 1; 2006, 86-99.

#### Chapter in Books:

- 1) **M Tanwar**, T Dada, R Dada. Primary congenital glaucoma. **Perspectives in Cytology and Genetics**. Volume XIV:2009:207-214
- 2) **M Tanwar**, V Sundararajan, MB Shamsi, M Kumar, D Pathak, R Kumar, R Kumar, NP Gupta, P Talwar, RK Sharma and R Dada. Infertility-Yq Micro-deletions and Implications in Assisted procreation. **Perspectives in Cytology and Genetics** 2007; vol. XIII: 273-287.
- 3) MB Shamsi, V Sundararajan, **M Tanwar**, P Talwar, R K Sharma, S Mukherjee , R Kumar, NP Gupta and R Dada. Characterization of sperm chromatin quality by Comet Assay. **Perspectives in Cytology and Genetics** 2007; vol. XIII: 255-262
- 4) V Sundararajan, R. Kumar, MB Shamsi, **M Tanwar**, M Kumar, D Pathak, R Kumar, N P Gupta , S Mukherjee , N Malhotra, TK Das, P Talwar, R K Sharma, and R Dada. Mitochondrial ATPase Gene Mutations Associated With Low Antioxidant Levels In Idiopathic Asthenozoospermic Indian Men **Perspectives in Cytology and Genetics** 2007; vol. XIII: 263-272
- 5) V Sundararajan, R. Kumar, D Pathak, MB Shamsi, **M Tanwar**, R Deccaraman, R Dada. Role of Environment, Occupational Exposure, Life Style and Diet on Free Radical Induced Mitochondrial DNA Damage and Reproductive Failure. **Environmental & Occupational Exposures** (2010) Chapter 4; Pages 78-101

#### Conferences/ Symposium/ Workshops Organized:

1. **Organizing Secretary** in National Workshop cum Awareness Program on “**Bioethics in Research: A Need or Compulsion**” organized by Department of Genetics held on 15<sup>th</sup> Nov. 2018 at Seminar Hall, Department of Genetics
2. **Joint Organizing Secretary** in National Workshop on “**Intellectual Property Rights**

- Protection**” organized by Department of Genetics and IPR Cell Maharshi Dayanand University, Rohtak held on 3<sup>rd</sup> Nov. 2018 at IHTM Conference Hall.
3. **Joint Secretary** in National Workshop on “**DNA Forensics- The Brouhaha or The Science**” held on November 21<sup>st</sup>, 2017 at Deptt. of Genetics, MDU Rohtak
  4. **Joint Secretary** in National Seminar on “**Current Scenario in Forensic Investigative Techniques**” held on September 7<sup>th</sup>, 2017 at DDE Hall MDU Rohtak.
  5. **Joint Secretary** in Workshop on “**Skill Development in Molecular Techniques**” sponsored by Radha Krishnan Foundation Fund held on November 12<sup>th</sup>, 2016 at Deptt. of Genetics, MDU Rohtak
  6. **Treasurer** in National Conference on “**Genetic Diversity and Therapeutic Potential of Natural Products**” sponsored by UGC-SAP held on September 17, 2016 at DDE Hall MDU Rohtak.
  7. **Joint Secretary** in National Workshop on “**Advanced Forensic Aspects of CSI & Fingerprint Examination**” held on November 21, 2015 at Deptt. of Genetics, MDU Rohtak
  8. **Treasurer** in National Conference on “**Therapeutic Potential of Natural Products: Current Innovations & Future Trends**” held on March 19, 2015 at DDE Hall MDU Rohtak
  9. **Joint Secretary** in National seminar on “**Novel Antimicrobials: An alternative to Clinical Antibiotics**” held on Sept. 14, 2013 at DDE Hall MDU Rohtak
  10. **Organizing Secretary** in One day National Seminar on “**Molecular Pathology of Human Genetic Diseases**” held on August 23<sup>rd</sup>, 2014 at Radhakrishnan Auditorium, MDU Rohtak

#### **Workshops/Conferences/Meetings attended:**

1. Attended one day Conference & Workshop on “**Emerging Infectious Diseases**” at Centre for Biotechnology, Maharshi Dayanand University Rohtak held on November 29<sup>th</sup> 2017.
2. Attended two days National Conference on “**Emerging Trends in Biochemistry**” held at DDE Hall MDU Rohtak on September 15<sup>th</sup> -16<sup>th</sup>, 2017
3. Participated in **National Workshop on Genomics and Proteomics** at Deptt. of Biochemistry during 3<sup>rd</sup> -5<sup>th</sup> March, 2014
4. Attended **Authors Workshop** in MDU Rohtak.
5. Attended the 4<sup>th</sup> DBT sponsored Workshop on “**Prenatal & Postnatal Diagnosis of Genetic Disorders using Molecular Techniques**” held in All India Institute of Medical Sciences from Jan 17<sup>th</sup> -31<sup>st</sup>, 2005
6. Attended the 2009 **ASIA-ARVO Meeting** from January 15-18, 2009 held at HICC, Hyderabad, Andhra Pradesh, India.
7. Attended the **1<sup>st</sup> Annual Meet of Indian Society of Ocular Pathology** on March 25<sup>th</sup> 2006 held at All India Institute of Medical Sciences, New Delhi, India.
8. Attended the **16<sup>th</sup> Annual Meeting of the Indian Eye Research Group** on July 28<sup>th</sup>-29<sup>th</sup>, 2007 held at LVPEI, Hyderabad, Andhra Pradesh, India..
9. Attended the **17<sup>th</sup> Annual Meeting of the Indian Eye Research Group** on July 26<sup>th</sup>-27<sup>th</sup>, 2008 held at Aravind-Madurai, Tamil Nadu, India.
10. Attended the **17<sup>th</sup> DBT Annual Meeting of the Indian Society for the study of Reproduction and Fertility (ISSRF)** from Feb 19<sup>th</sup> -21<sup>st</sup>, 2007

#### **Fellowships and Awards:**

- UGC/CSIR -NET in Life Sciences (December, 2003)
- UGC/CSIR -NET- Junior Research Fellowship in Life Sciences (June, 2004)
- UGC/CSIR -NET- Junior Research Fellowship in Life Sciences (December, 2004)

### **Strengths:**

- **Molecular Biology:** Association Studies by Linkage Analysis and GWAS, DNA isolation, PCR amplification, DNA sequencing, , Mutation screening, Y-chromosome micro-deletion analysis etc
- **Cytogenetics:** Human Lymphocyte Culture and harvesting, slide preparation & GTG banding, Karyotyping and analysis of chromosomal abnormalities by manual method and Cytovision software
- **Organizational ability:** Conducting workshops, teaching WHO fellows, writing proposals for grants and fellowships, lab quality control & equipment validation, guiding students for thesis, preparing protocols, organizing seminars
- Drosophila Culture and performed basic experiments of Mendelian Genetics

### **Positive Qualities:**

- Straight forward
- Quick learner
- Hard working
- Good in team work

**Proficient Languages:** English, Hindi

### **Nucleotide Registrations at NCBI**

Seven nucleotide variations in **Homo sapiens cytochrome P4501B1 (CYP1B1)** gene with GenBank accession numbers **FJ815437, FJ815438, FJ815439, GQ925803, GQ925804, GQ925805,** and **GQ925806**; one nucleotide variation in **Homo sapiens sperm protamine P2 (PRM2)** gene with GenBank accession number **GU190363**; one nucleotide variation in **Homo sapiens spermatid nuclear transition protein 1 (TNP1)** gene with GenBank accession number **GU190364** ; thirty six **Homo sapiens** mitochondrial nucleotide variations with GenBank accession numbers **GU186068- GU186097** and **GU197842-GU197847** have been provided with my name at NCBI database.

**(Mukesh Tanwar)**