

# Amisha Parmar

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## CURRENT POSITION

### PhD student (Nov 2022 – Oct 2025)

Department of Neurosciences "Rita Levi Montalcini", University of Turin, Via Cherasco n. 15, 10126 Torino, Italy and

Neuroscience Institute Cavalieri Ottolenghi (NICO) , Regione Gonzole, 10 - Ospedale San Luigi, 10043, Orbassano (TO), University of Turin, Italy

**Supervisor:** Dr Letizia Marvaldi

## EDUCATION

- Jan 20 – Jun 21** **MSc (by Research) Neuroscience** Viva passed  
University of Central Lancashire  
*Research project:* "Regulation of gene expression in the brain by the Alzheimer's disease-implicated transcription factor REST"  
Supervisor: Dr Vassilios Beglopoulos, Lecturer in Neuroscience
- Aug 11 – Jun 13** **Master of Science (Pharm.) in Pharmacology & Toxicology** (8.94 CGPA) Dist.  
National Institute of Pharmaceutical Education and Research, Mohali, India  
*Research project:* "Influence of Ulcerative Colitis on gonad development and perturbation: A study in mice"  
Supervisor: Dr G. B. Jena
- July 06 – Jun 10** **Bachelor of Pharmacy** 67.5% First class  
Gujarat University  
Industrial training
  - Two months of industrial training at J.B. Chemicals & Pharmaceuticals Limited, Gujarat (2009)
  - One-month industrial training at Sunview biotech, Gujarat (2010)
- Jun 05 – May 06** **HSC (12<sup>th</sup> Grade)** (81.33%) Dist.  
Gujarat Higher Secondary Education Board, Gandhinagar, Gujarat, India
- Jun 03 – May 04** **SSC (10<sup>th</sup> Grade)** (88.28%) Dist.  
Gujarat Secondary Education Board, Gandhinagar, Gujarat, India

## PROFESSIONAL EXPERIENCE

**Aug 21 – Oct 23** **Research Technician, Neuroscience**  
**Sheffield Institute for Translational Neuroscience – SiTraN,**  
**The University of Sheffield, Sheffield, United Kingdom**  
**PI: Dr Richard Mead**

### **Amyotrophic Lateral Sclerosis (ALS)**

- Undertaking *in vivo* experiments to assess a gene therapy approach for ALS  
SOD1G93a transgenic mouse colony management, genotyping, Intracisterna magna injection in pups (p1/2), Behavioural motor assessment (Live animal electrophysiology, gait analysis using Catwalk, rotarod, neurological scoring), tissue processing using a range of laboratory techniques. Protocols and other required documents writing.

**Feb 21 – Aug 21 Medical Scientific Laboratory Assistant (Covid Lab)**  
**NHS Test Laboratory, School of Pharmacy and Biomedical Sciences**  
**University of Central Lancashire, Preston, United Kingdom**

**Apr 19 – Nov 19 Senior executive, Biology Research – Pharmacology (Oncology)**  
**Sun Pharma Advanced Research Company, Vadodara, India**

- Validated experimental animal model for TNBC and evaluated the efficacy of NCEs.
- Maintained lab documents as per Good Laboratory Practices.
- Prepared study protocols and study reports.

Triple-negative breast cancer (TNBC)

- o Orthotopic Mammary Fat Pad Model
- o Subcutaneous orthotopic model

**Feb 17 – Apr 19 Junior Research Associate – II, Neuroscience**  
**Jubilant Biosys Ltd., Bangalore, India**

- Designed and executed *in vivo* preclinical studies to test the efficacy of novel small molecules.
- Assisted in the validation of preclinical *in-vivo* experimental models.
- Established in-house Immunohistochemistry technique and examined localization and translation levels of proteins of interest in the brain (Frontal cortex, Entorhinal cortex, Hippocampus) by Immunohistochemistry
- Data analysis using Graphpad Prism. Maintained lab notebooks. Prepared study reports.

**Therapeutic area: Neurodegeneration and Neuroinflammation (ER Stress)**

Alzheimer's disease:

- o Transgenic mice models (P301L, APPSwe-Tau, Tg4510)
- o Streptozotocin model
- o Tunicamycin model (ER Stress)
- o Entorhinal cortex lesion model (using wire knife)

Stroke:

- o Bilateral common carotid artery occlusion model

**Therapeutic area: Neuropathic pain**

- o Chronic constriction injury model
  - o Spared nerve injury model
- Mechanical allodynia (using a set of Von Frey filaments)  
Cold allodynia (acetone test)

**Aug 15 – Jul 16 Pharmacologist, *In vivo* biology**  
**Shree Dhanvantary Pharmaceutical Analysis and Research Centre, Surat, India**

- Assisted in conducting hormonal bioassays (hCG Bioassay, Urofollitropin Bioassay for FSH activity, Menotrophin Bioassay for FSH and LH activity) as per sponsor specified Guidelines and a preclinical study pertaining to anxiety and depression.
- Maintained animal house records and regular activities as per CPCSEA guidelines.

**COURSES AND TRAINING**

- **Statistical Methods for Research - Biomedical Sciences**  
Epigeum Online Course System
- **Molecular Biology Training Program (15 days – Oct 16)**  
Rapture Biotech, Noida, India  
Gel electrophoresis, Western blotting, PCR and RT-qPCR, DNA-RNA isolation
- **Research training at the Department of Cell Biology (Aug 16 – Oct 16)**  
Dabur Research Foundation, Ghaziabad, India
  - o In-vitro cell culture: Maintenance of cancer cell lines: Cell reviving, sub-culturing and cryopreservation
  - o Ex-vivo tissue culture: Selenite-induced cataract model
- **Industrial program in Pharma Regulatory Affairs (May 12 – Apr 13)**  
Bioinformatics Institute of India, Noida, India

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## TECHNICAL SKILLS

### Experimental

#### **In-vivo**

- Laboratory animal handling (Mice, Rats), and dosing (per-oral, ip, sc, im, intra-planter, intraarticular & iv),
- Blood and tissues collection, Transcardial perfusion
- Stereotactic injection in mouse brain (Intracerebroventricular, Intracisterna magna)
- Laboratory animal surgeries (mouse, rat)
- IVIS® Spectrum in vivo imaging system

#### **Histology**

- Tissue processing, embedding, staining

#### **Immunohistochemistry**

#### **Microscopy**

- Brightfield, Fluorescence

#### **Molecular Biology**

- Western blotting,
- RT-qPCR
- Biochemical estimations (MPO, GSH, MDA), ELISA

#### **Genotoxicity assays**

- Single cell gel electrophoresis assay (Comet assay),

#### **Behavioral tests**

- Rotarod test,
- Electrophysiology (motor nerve stimulation)
- Novel Object Recognition Test
- Mechanical allodynia, Cold allodynia

### IT

- M.S. office tools like M.S Word, PowerPoint, Excel
- Image J, ChemiDoc-Image Lab, Graphpad prism, Reference Management Software (Endnote Plus)
- Basic user of R
- Meta-analysis: Gene Ontology Enrichment Analysis, Protein-Protein Interaction Analysis (STRING database), Gene Set Enrichment Analysis, Pathway analysis
- Scientific data retrieval from various Internet portals like Springerlink, Science-direct, Pubmed, Google Scholar

### Languages known

Gujarati, Hindi, English

### Soft skills

### Teaching/Mentoring/Supervising:

- Contributed to supervising two summer internship (2020) students at UCLan, UK
- Mentored undergraduate students in their lab sessions (2020) at UCLan, UK
- Trained Biotech Consortium India Limited (BCIL) sponsored internship candidate at Jubilant Biosys Ltd. (2018)
- Mentored a post-graduate research student in dissertation work on Anxiety and Depression (2016) at SDPARC
- Taught a few local school children at home during my career break (2013-2015)

### Scientific writing:

- Published one research article in a peer-reviewed journal
- Worked as a freelancer with MP Advisors. Prepared a therapeutic report entitled, "Moderate to Severe Pain: Novel Abuse-Deterrent Formulation Technologies and Emergence of Novel Mechanisms in the Management of Pain" (2015)

### Self-motivation and Learning aptitude:

- During the pandemic (Covid-19), my project work remained on hold for six months (2020),
  - I independently learned R programming through the internet and gained proficiency in creating heatmaps and hierarchical clustering of quantitative data.
  - Attended online courses to gain insights into transcriptomics and proteomics data analysis

### Good attitude in working independently and in a team:

- Independently troubleshoot, and established IHC technique at Jubilant Biosys Ltd. (2017-2019)
- In my academic and professional career, worked independently and in a team on various projects

## ADDITIONAL INFORMATION

### Publication/s

- **A. R. Parmar, P. P. Trivedi and G. B. Jena (2014).** "Dextran sulfate sodium-induced ulcerative colitis leads to testicular toxicity in mice: Role of inflammation, oxidative stress and DNA damage."-**Reproductive Toxicology** (ReprodToxicol. 2014 Nov;49:171-84.Doi10.1016/j.reprotox.2014.08.004. Epub 2014 Aug 27)

### Awards and Honours

- Awarded with a PhD scholarship at University of Turin, Italy (Jul 22)
- Awarded with **£1000 international bursary, £2000 merit scholarship, and £3000 school contribution towards bench fees** for MSc (by Research) program at University of Central Lancashire (Jan 20 – Mar 21)
- Awarded with "**A Certificate of Appreciation**" by Jubilant Biosys Ltd., Bangalore "For demonstrating exemplary performance and making a valuable contribution to the company" (Feb 2018)
- Achieved **all India rank 22** in national level **NIPER Ph.D. – 2018** entrance exam conducted by NIPER, Ahmedabad
- Qualified **Graduate Record Examination (GRE)** with a score of **310/340** (Nov 14)
- **Post-graduate Research Scholarship** awarded by Ministry of Chemical and Fertilizers, Government of India to pursue Master of Science (Pharm.) at NIPER, Mohali – Top-ranked pharma post-graduate research institute of India
- Qualified **NIPER-JEE-2011** (national level) entrance exam conducted by NIPER, Mohali, India
- Qualified **GPAT- 2011** (national level) entrance exam conducted by MS University, India

### Presentations

- Poster presentations- "Histological characterization and expression of GSK-3beta and immediate-early genes in a new conditional knockout mouse model relevant to Alzheimer's disease", Alzheimer's Research UK Conference 2021, UK
- Oral presentation- Alzheimer's disease-related molecular mechanisms controlled by the transcription factor REST in the brain, Alzheimer's Research UK NorthWest Science Day, UK (Jan 21)
- Poster presentation- "Studies on the testicular toxicity in dextran sulfate sodium-induced ulcerative colitis in mice" in the 32nd Annual Conference of Society of Toxicology (STOX) held at IITR-Lucknow, U.P (Dec 12)

### Membership/s

- Alzheimer's Research UK North West Network

### Conferences

- **ENCALS** - European Network to Cure ALS, Edinburgh, Scotland (Jun 22)
- Virtual 32<sup>nd</sup> international symposium on **ALS/MND, motor neuron disease association** (Dec 21)
- **Alzheimer's Research UK** Conference (Mar 21)
- National Conference on **New Paradigm in Toxicology** held by Society of Toxicology (STOX), India at CSIR-IITR, Lucknow, U.P (Dec 12)

## Amisha Parmar

- National Symposium on **Good Laboratory Practice (GLP)** at PGIMER, Chandigarh (Jul 12)
- The 4<sup>th</sup> International Symposium on **Drug Metabolism and Pharmacokinetics (DMPK)** at NIPER, Mohali (Feb 12)
- The 61<sup>st</sup> Indian Pharmaceutical Congress, Ahmedabad (Dec 09)
- The 60<sup>th</sup> Indian Pharmaceutical Congress, New Delhi (Dec 08)

### Certifications

- **Registered Pharmacist certificate** awarded by Gujarat State Pharmacy Council, India