MANISH MALVIYA, PhD

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Senior Research Scientist
Research interest: Immunotherapy/Neuroimmunology
Institute: Memorial Sloan Kettering Cancer Center,
1275 York Ave, New York, NY 10065, USA

EDUCATION
2015: Ph.D, in Immunology, Germany
2009: Ph.D, in Chemistry, India
2004: M.Sc, in Biochemistry, India

SUMMARY

Having worked in Neuroimmunology for over twelve years, I have acquired research expertise in Immunology and Immunotherapy. My primary expertise lies in the molecular design and generation of genetically modified regulatory T cells (Tregs) and effector T cells (Teff) expressing engineered Chimeric Antigen Receptor (CAR), recombinant T Cell Receptor (TCR), and recombinant monoclonal antibodies (scFv & Full Ab). These engineered immune cells and antibodies are powerful new medicines, offering hope for curative responses in patients with Cancer, Autoimmune Diseases, Infectious Diseases, and Alzheimer's Disease (AD). My long-term research interests involve developing next-generation targeted immunotherapies for cancer patients with autoimmune diseases such as Multiple Sclerosis, Type 1 Diabetes and Rheumatoid Arthritis.

RESEARCH ACTIVITIES

Since 2019 : Senior Research Scientist, with Prof. David A. Scheinberg at MSKCC, New York.
Project - Engineered CAR-Treg immunotherapy for Alzheimer's disease.

2015 - 2019 : Post-doctoral position, with Prof. Roland Liblau, Laboratoire d'Immunologie, INSERM, Toulouse, FRANCE.
Project - Molecular engineering of Tregs expressing recombinant TCR: study of their therapeutic effects in an animal model of multiple sclerosis.

2011 - 2015 : PhD in Immunology, with Prof. Norbert Goebels, Neurology, HHU, Düsseldorf, GERMANY.
Project - Identification of autoantibody producing plasma cells in the CSF of Autoimmune encephalitis patients.

2009 - 2011 : Research Associate, with Prof. Jochen Walter, Neurology, University of Bonn, GERMANY.
Project - Molecular mechanism of Amyloid-β (Aβ) fibril formation and development of monoclonal antibodies against phosphorylated Aβ.

2007 - 2009 : PhD in Chemistry, with Prof. K.S. Rangappa, University of Mysore, INDIA.
Project - Development of Muscarinic receptor -1 agonist molecules as a potential disease-modifying therapy for Alzheimer's disease.

2005 - 2007 : Research Assistant, with Prof. M.N. Subhash, Neurochemistry, NIMHANS, INDIA.
Project - *In vivo* effect of antidepressants on [^{3}H]paroxetine binding to serotonin transporters in rat brain.

2004 - 2005 : Trainee Scientist in Bioinformatics, Jubilant Biosys Ltd., INDIA.

2002 - 2004 : Master of Science (M.Sc.) in Biochemistry, Banaras Hindu University, INDIA.

REVIEWING OF SCIENTIFIC ARTICLES, AND MEMBERSHIP

- **Review Editor:** Journal of Immunology; Frontiers in Immunology; Frontiers in Neurology; International Journal of Immunology. https://loop.frontiersin.org/people/840174/overview
- **Member:** The American Association of Immunologists (AAI-id # 00254595); The American Association for the Advancement of Science (AAAS# 41287225); The New York Academy of Science; and Life member, Society for Neurochemistry-India (SNCI # LM-I-240).

RESEARCH EXPERTISE

- **Immunology**: Adoptive cell therapy; Molecular engineering of CAR-Tregs and CAR-Teff cells; Immunization of mice; Immunophenotyping; Cytokine profiling; ELISpot; Flow cytometry; ELISA; Antigen-specific Treg Suppression assays; Antigen-specific T cell proliferation and killing assays; Assay development, Primary immune cells isolation (Tregs, Teff cells, B cells, NK cells, Monocytes, and Dendritic cells) from Human PBMC, and Mouse's Spleen, Lymph nodes, Bone marrow, Tumor, Brain, Gut, etc.; Alanine scanning; In-vitro, ex-vivo and in-vitro preclinical studies.
- **Virology:** Retroviral and lentiviral vectors engineering, virus production, and transduction.
- **Biochemistry & Molecular biology:** Molecular cloning; Advanced vector design; Single-cell RT-PCR, V(D)J repertoire cloning and analysis; Western blot; Immunoprecipitation; Recombinant protein expression; Enzyme functional assays; CRISPR/Cas9, Imaging & Microscopy.
- **Animal models & Cognitive-behavioral tests:** Generation of transgenic mice; Tumor, AD, and Autoimmune disease modeling (Inflammation and EAE models); Handling immunocompetent and immunodeficient models; Dissection; Bioluminescence; Intravenous, Intraperitoneal, and Intracranial injections; Stereotaxic brain microinjection; Y-maze, and Novel object recognition test.
- **Data analysis tools:** Proficient in the use of Prism, Flowjo, SnapGene Viewer, Living Image, Image J, CaseViewer, Illustrator, Benchling, Microsoft office.

FELLOWSHIP AWARDS

- The European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS)-Postdoc Fellowship.
- European Commission-Marie Sklodowska-Curie-ITN-Neurokine postdoc fellow.
- The Indian Council of Medical Research (ICMR)- Senior Research Fellowship.
- Riken BSI (Japan) 2008 Summer School fellowship.
- Osaka University (Japan) Global COE and IBRO-APRC sponsored 2008 Summer School fellowship.

WORKSHOPS/CONFERENCES/SCHOOLS

- ECTRIMS 2018-Berlin, Germany.
- ARSEP meeting PARIS, June 2018.
- MSPARIS2017 (7 Joint ECTRIMS- ACTRIMS meeting).
- Good Scientific Practice for Doctoral Researchers at Heinrich Heine University, 2015, Düsseldorf, Germany.
- RIKEN Brain Science Institute Summer School, 2008 at *JAPAN.*
- Osaka University Global COE and IBRO- APRC Summer School, 2008 *JAPAN.*

SOFT SKILLS: Leadership, Mentoring, Communication, Independence, Teamwork, Strong analytical skills, Problem-solving ability, and Innovative aptitude.

LANGUAGES: English & Hindi- Native or Bilingual Proficiency.
German & French- Intermediate Proficiency.

INTERESTS: Badminton, Running, Yoga, Hiking, Travel, Museums.

SELECTED PUBLICATIONS

1. **Manish Malviya**, et al. (**2020**); Treatment of experimental autoimmune encephalomyelitis with engineered bi-specific Foxp3+ regulatory CD4+ T cells. *J Autoimmun*. Jan 13:102401. https://doi.org/10.1016/j.jaut.2020.102401
2. TJ Gardner, CM Bourne, MM Dacek, K Kurtz, **Manish Malviya**, et al. (**2020**); Targeted Cellular Micropharmacies: Cells Engineered for Localized Drug Delivery. *Cancers* 12 (8), 2175. https://doi.org/10.3390/cancers12082175

3. **Manish Malviya**, et al. (**2017**); NMDAR encephalitis: passive transfer from man to mouse by a recombinant antibody. *Ann Clin Transl Neurol*. Oct 3;4(11):768-783. https://doi.org/10.1002/acn3.444
4. Winter M, Baksmeier C, Steckel J, Barman S, **Manish Malviya**, et al. (**2016**); Dose dependent inhibition of demyelination and microglia activation by IVIG. *Ann Clin Transl Neurol*. Sep 23;3(11):828-843. https://doi.org/10.1002/acn3.326
5. Norbert Goebels, **Manish Malviya,** et al. (**2016**) Identification of Autoantibody Producing Plasma Cells in the CSF of Autoimmune Encephalitis (AIE) Patients (P6.132). Neurology. April 05, 2016; 86 (16 Supplement). http://n.neurology.org/content/86/16_Supplement/P6.132.short.
6. **Manish Malviya,** et al. (**2014**); Autoimmune encephalitis: Single cell PCR analysis of the intrathecal plasma cell repertoire. *J Neuroimmunol.* October 15, Volume 275, Issues 1-2, Page5. http://dx.doi.org/10.1016/j.jneuroim.2014.08.019
7. **Manish Malviya**, et al. (**2009**); Muscarinic receptor 1 agonist activity of novel N-aryl carboxamide substituted 3-morpholino arecoline derivatives in Alzheimer's presenile dementia models. *Bioorg Med Chem*. 17, 5526-5534. https://doi.org/10.1016/j.bmc.2009.06.032
8. Girisha HR, Chandra JN, Boppana S, **Manish Malviya**, et al. (**2009**); Active site directed docking studies, synthesis and pharmacological evaluation of cis-2, 6-dimethyl piperidine sulfonamides as inhibitors of acetylcholinesterase. *Eur J Med Chem*. 44, (10), 4057-4062. https://doi.org/10.1016/j.ejmech.2009.04.042
9. **Manish Malviya**, et al. (**2008**); Muscarinic receptor 1 agonist activity of novel N-arylthioureas substituted 3-morpholino arecoline derivatives in Alzheimer's presenile dementia models. *Bioorg Med Chem*. 16, 7095-7101. https://doi.org/10.1016/j.bmc.2008.06.053
10. Chandra JN, **Manish Malviya**, et al. (**2008**); Effect of novel arecoline thiazolidinones as muscarinic receptor 1 agonist in Alzheimer's dementia models. *Neurochemistry International*. 52, 376-383. https://doi.org/10.1016/j.neuint.2007.07.006
11. Nadgir SM & **Manish Malviya**. (**2008**); *In vivo* Effect of antidepressants on [3H]paroxetine binding to serotonin transporters in rat brain. *Neurochemical Research*. 33, 2250-56. https://doi.org/10.1007/s11064-008-9703-z

FULL PUBLICATION LIST: https://scholar.google.com/citations?user=OK5YtBIAAAAJ&hl=en&oi=ao

REFERENCES

1. **David A. Scheinberg, MD, PhD**
   Director, Center for Experimental Therapeutics, Memorial Sloan Kettering Cancer Center, NY
   Email: scheinbd@mskcc.org; Phone: 646-888-2190; Fax: 646-422-0640
   https://www.mskcc.org/cancer-care/doctors/david-scheinberg

2. **Yueming Li, PhD**
   Lab Head, Chemical Biology Program, Memorial Sloan Kettering Cancer Center, NY
   Email: liy2@mskcc.org; Phone: 646-888-2194 or 2193 Fax: 646-422-0640
   https://www.mskcc.org/research/ski/meet-researchers/yueming-li-work/

3. **Tao Dao, MD, PhD**
   Senior Research Scientist, Memorial Sloan-Kettering Cancer Center, New York, NY 10021, USA.
   Email: t-dao@ski.mskcc.org; Office Phone:646-888-3568; Lab Fax:646-422-0640
   https://www.mskcc.org/research/ski/labs/members/tao-dao

4. **Roland Liblau, MD, PhD**
   Infinity - Institut Toulousain des Maladies Infectieuses et Inflammatoires
   INSERM UMR1291 - CNRS UMR5051 - Université Toulouse III, FRANCE
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