

MARIA GRAZIA PETRILLO

WORK EXPERIENCE

Postdoctoral Fellow

National Institute of Environmental Health and Science (NIEHS) - National Institute of Health (NIH) [05/10/2015 – 04/04/2021]

City: Durham- North Carolina

Country: United States

My research project at the NIEHS focused on investigating how the transcriptional activity of the Glucocorticoid Receptor (GR) is altered by its interaction with other regulatory proteins known to affect the cell-specific response to glucocorticoid treatment. Main areas: Pharmacology and Environmental Endocrinology.

Research Fellow

Department of Medicine, Section of Pharmacology, University of Perugia [15/03/2013 – 14/09/2015]

City: Perugia

The research activity, in the immuno-pharmacology field, has focused on the following projects:

- Investigating the potential anti-inflammatory role of the glucocorticoid-regulated GILZ and Long-GILZ proteins;
- Understanding the antiproliferative effects of GILZ and Long-GILZ proteins and their impact on p53 function and activation;
- Exploring the antiproliferative role of Long-GILZ in cell differentiation and tumor progression;
- The use of recombinant proteins, such as antibodies and fusion proteins, for the treatment of autoimmune and inflammatory diseases.

EDUCATION AND TRAINING

PhD in Pharmacological Biotechnology and Clinical Pharmacology

University of Perugia [01/11/2008 – 31/10/2012]

Field(s) of study: Pharmacology , Immunology

Thesis: Identification of a novel Treg cell subset: its role in the therapy of autoimmune diseases

Main studies:

- Investigating the role of GITR and its ligand GITRL in mouse Dendritic cells and in extravasation;
- Studying the role of GITR in human T lymphocytes isolated from healthy donors and patients suffering from LES and Sjogren's syndrome.

Master's degree in Medical Biotechnology

University of Perugia [01/01/2006 – 23/05/2008]

Final grade : 110/100 cum laude

Bachelor's Degree in Biotechnology

University of Perugia [01/10/2002 – 16/02/2006]

Final grade : 107/110

PUBLICATIONS

Publications

Author of 23 peer-reviewed papers published in international journals.

- Scopus ID: 36955447600; 460 citations, h-index:13
- Google scholar - 623 citations; h-index:14

Murine Glucocorticoid Receptors Orchestrate B Cell Migration Selectively Between Bone Marrow and Blood.

[2020]

doi: 10.4049/jimmunol.1901135

Microencapsulated G3C Hybridoma Cell Graft Delays the Onset of Spontaneous Diabetes in NOD Mice by an Expansion of Gitr + Treg Cells.

[2020]

doi: 10.2337/db19-0087

Glucocorticoids mobilize macrophages by transcriptionally up-regulating the exopeptidase DPP4.

[2020]

doi: 10.1074/jbc.RA119.010894

Identification of 15 T Cell Restricted Genes Evaluates T Cell Infiltration of Human Healthy Tissues and Cancers and Shows Prognostic and Predictive Potential. [2019] doi: 10.3390/ijms20205242

Beta-Arrestin-1 inhibits glucocorticoid receptor turnover and alters glucocorticoid signaling.

[2019]

doi: 10.1074/jbc.RA118.007150

Clinical Use and Molecular Action of Corticosteroids in the Pediatric Age

[2019]

doi: 10.3390/ijms20020444

Long glucocorticoid-induced leucine zipper regulates human thyroid cancer cell proliferation.

[2018]

doi: 10.1038/s41419-018-0346-y

A focused Real Time PCR strategy to determine GILZ expression in mouse tissues.

[2015]

doi: 10.1016/j.rinim.2015.10.003

Glucocorticoid-induced tumour necrosis factor receptor-related protein: a key marker of functional regulatory T cells.

[2015]

doi: 10.1155/2015/171520

L-GILZ binds p53 and MDM2 and suppresses tumor growth through p53 activation in human cancer cells.

[2015]

doi: 10.1038/cdd.2014.129

GITR+ regulatory T cells in the treatment of autoimmune diseases.

[2015]

doi: 10.1016/j.autrev.2014.10.011

Expansion of regulatory GITR+CD25^{low}/CD4⁺ T cells in systemic lupus erythematosus patients.

[2014]

doi: 10.1186/s13075-014-0444-x

Transcriptional regulation of kinases downstream of the T cell receptor: another immunomodulatory mechanism of glucocorticoids.

[2014]

doi: 10.1186/2050-6511-15-35

Glucocorticoid-Induced Tumor Necrosis Factor Receptor Family-Related Ligand Triggering Upregulates Vascular Cell Adhesion Molecule-1 and Intercellular Adhesion Molecule-1 and Promotes Leukocyte Adhesion.

[2013]

doi: 10.1124/jpet.113.207605

Characterization of a new regulatory CD4+ T cell subset in primary Sjögren's Syndrome.

[2013]

doi: 10.1093/rheumatology/ket179

Expansion of CD4+CD25-GITR+ Regulatory T-Cell Subset in the Peripheral Blood of Patients with Primary Sjogren's Syndrome: Correlation with Disease Activity.

[2012]

doi: 10.4081/reumatismo.2012.293

CD8+ T Cells: GITR Matters.

[2012]

doi: 10.1100/2012/308265

Pharmacological Modulation of GITRL/GITR System: Therapeutic Perspectives.

[2012]

doi: 10.1111/j.1476-5381.2011.01753.x

CD4+ CD25low GITR+ Cells: A Novel Human CD4+ T-Cell Population with Regulatory Activity.

[2011]

doi.org/10.1002/eji.201040943

A pathogenetic approach to autoimmune skin disease therapy: psoriasis and biological drugs, unresolved issues, and future directions.

[2011]

doi: 10.2174/138161211798157649

Glucocorticoid-Induced TNFR Family Related Gene (GITR) Enhances Dendritic Cell Activity.

[2010]

doi: 10.1016/j.imlet.2010.09.008

Role of regulatory T cells in rheumatoid arthritis: facts and hypothesis.

[2010]

doi.org/10.1007/s13317-010-0008-2

Book chapter: Glucocorticoids: Inflammation and Immunity.

[2016]

https://link.springer.com/chapter/10.1007/978-3-319-45950-9_3

ORAL COMMUNICATIONS

When the Glucocorticoid Receptor Meets the Mineralocorticoid Receptor in the Nucleus of Human Cells. ENDO Online 2020 Meeting.

[08/06/2020 – 22/06/2020]

Beta-arrestin 1: a novel partner in the regulation of the glucocorticoid receptor activity.

International Experimental Biology (EB) meeting in Orlando, Florida.

[06/04/2019 – 09/04/2019]

A novel interaction between glucocorticoid receptor and beta-arrestin proteins. 38° National Conference of the Italian Society of Pharmacology. Rimini, Italy

[25/10/2017 – 28/10/2017]

Long Glucocorticoid-Induced Leucine Zipper (L-GILZ) acts as a tumor suppressor by activating p53. 36° National Conference of the Italian Society of Pharmacology. Torino, Italy

[23/10/2013 – 26/10/2013]

CD4+CD25lowGITR+ cells: a candidate for Treg immunotherapy. 16° National Seminar of Italian Society of Pharmacology. Rimini, Italy

[16/09/2012 – 18/09/2012]

PERIPHERAL BLOOD CD4+CD25LOWGITR+ CELLS: A NOVEL HUMAN REGULATORY T CELLS SUBSET DISREGULATED IN AUTOIMMUNE DISEASES. 14° National Seminar of Italian Society of Pharmacology. Siena, Italy

[20/09/2010 – 23/09/2010]

HONOURS AND AWARDS

Travel award for best abstract

American Society of Biochemistry and Molecular Biology (ASBMB) [04/04/2020]

Moderator of the Spotlight session "Signal Transduction and Regulation" at the Experimental Biology (EB) meeting in Orlando, FL 2019

American Society of Biochemistry and Molecular Biology (ASBMB) [06/04/2019]

Fellows Award for Research Excellence (FARE)

National Institute of Health (NIH) [05/09/2018]

Travel award for best abstract

American Society of Biochemistry and Molecular Biology (ASBMB) [21/04/2018]

Editorial collaborator award for the e-journal SIF Ricerca di base

Italian Society of Pharmacology [01/01/2017]

Editorial collaborator award for the e-journal SIF Ricerca di base

Italian Society of Pharmacology [01/01/2015]

Mauro Felli Award for research in the field of pollution from physical agents and its effects on the environment.

CIRIAF (Centro Interuniversitario di Ricerca sull'Inquinamento e sull'Ambiente) [04/05/2013]

Award for best oral communication. National Meeting of Ph.D. Students in Pharmacology, 2011

Italian Society of Pharmacology [27/09/2011]

NETWORKS AND MEMBERSHIPS

Member of the Endocrine Society

[01/01/2019 – Current]

Member of the American Society for Biochemistry and Molecular Biology (ASBMB)

[01/01/2015 – Current]

Member of the Italian Society of Pharmacology (SIF)

[01/01/2010 – Current]

EDITORIAL SKILLS

Member of the editorial board of Frontiers in Immunology

[26/02/2020 – Current]

Editor of the e-journal SIF ricerca di base

[01/04/2014 – Current]

TECHNICAL SKILLS AND COMPETENCES

Molecular Biology

DNA, RNA extraction, cloning, subcloning, gene transfection and silencing by siRNAs, PCR, Real-Time PCR, ChIP-qPCR, FAIRE-qPCR.

Expertise in Omics Sciences

CHIP-seq, RNA-seq, Microarray, FAIRE-seq, and ATAC-seq.

Tissue culture

Maintaining immortalized mammalian cell lines, generation of bone marrow-derived dendritic cells and macrophages, primary cell cultures (BMDC, BMDM, T lymphocytes, macrophages, human PBMC), isolation of cell population by magnetic cell sorting (MACS).

Immunological techniques

Flow cytometry, ELISPOT, ELISA, cytotoxic T cell assay, T suppression assay, lymphocyte proliferation assay, T cell polarization.

Protein assay

Western blotting, protein-protein interaction analysis by immunoprecipitation and proximity ligation assay; in vivo ubiquitination assay; in vitro transcription/ protein translation; purification of recombinant proteins expressed in bacteria or eukaryotic cells.

Histology and Immunohistochemistry

Immunohistochemistry, immunofluorescence, and proximity ligation assay, expertise in confocal microscopy.

Animal work

Mouse husbandry, mice breeding, and genotyping. Tissue dissection and organ collection.

DIGITAL SKILLS

Office Suite / Adobe creative suite / svg graphic / Beacon designer / Vector NTI / FCS express / Flow Jo

/ Various bioinformatic tools available on the Web (NCBI, UCSC, Ensembl, etc) / Methamorph / Imaris / Fiji / IPA / Partek genomic suite / ImageScope / Zeiss ZEN / GREAT (Genomic Regions Enrichment of Annotations Tool) / HOMER (Hypergeometric Optimization of Motif EnRichment)

LANGUAGE SKILLS

Mother tongue(s):

Italian

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

DECLARATION

Maria Grazia Petrillo's Curriculum Vitae is true and correct as at February 22, 2021