



Rachele Bigi

● WORK EXPERIENCE

01/07/2021 – CURRENT Rome, Italy

RESEARCH FELLOW (RTDA) UNIVERSITY LA SAPIENZA OF ROME, DEPARTMENT OF NEUROSCIENCE, MENTAL HEALTH AND SENSORY ORGANS

Studying the role of Epstein-Barr virus (EBV) on the pathogenesis and development of Multiple Sclerosis in the laboratory of Prof. Marco Salvetti

10/2019 – 06/2021 Rome, Italy

POSTDOCTORAL RESEARCH ASSOCIATE UNIVERSITY LA SAPIENZA OF ROME, DEPARTMENT OF NEUROSCIENCE, MENTAL HEALTH AND SENSORY ORGANS

Studying the role of Epstein-Barr virus (EBV) on the pathogenesis and development of Multiple Sclerosis in the laboratory of Prof. Marco Salvetti

Department Department of Neuroscience, Mental Health and Sensory Organs - Sapienza University of Rome |

Address Via di Grottarossa, 1035, 00189, Rome, Italy | **Website** https://web.uniroma1.it/dip_nesmos/

01/01/2016 – 31/08/2019 Chapel Hill, United States

POSTDOCTORAL RESEARCH ASSOCIATE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, USA

Laboratory of Prof. Dirk Dittmer

First project: to study the role of Epstein-Barr virus (EBV) on the regulation of host cells microRNA and the importance of EBV and Kaposi's sarcoma-associated herpesvirus (KSHV) co-infection in the pathogenesis of Primary Effusion Lymphoma (PEL). To inquire into co-localization between the most important viral proteins of EBV and KSHV, EBNA-1 and LANA, I became an expert at working with 3D immunofluorescence, STORM microscopy and CRISPR/Cas9 techniques. I also analyzed the expression of cellular mRNA using Affymetrix Analysis and the regulation of the viral Open Reading Frame (ORFs) through Formaldehyde-Assisted Isolation of Regulatory Elements (FAIRE), learning to work with next generation sequencing platforms.

Second project: to develop a pediatric vaccine for Zika virus. To complete this project I became an expert in mouse work.

Third project: collaboration with the University of Cagliari to test new sulphonamides compounds active against KSHV

Department Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill |

Address 450 West Drive, CB 7295, 27599, Chapel Hill, United States | **Website** www.med.unc.edu/microimm/dittmerlab/

● EDUCATION AND TRAINING

10/2014 – 12/2015 Roma, Italy

PHD IN LABORATORY OF VIRAL ONCOLOGY (PROF. ALBERTO FAGGIONI) Department of Experimental Medicine, Sapienza University of Rome (Italy)

- Viral oncology

Website https://web.uniroma1.it/dip_dms/

11/08/2013 – 07/08/2014 Chapel Hill, United States

EXCHANGE STUDENT IN LABORATORY OF VIRAL ONCOLOGY (PROF. DIRK DITTMER) University of North Carolina at Chapel Hill (USA)

- Epstein-Barr virus (EBV) and Kaposi's sarcoma-associated herpesvirus (KSHV)
- 3D Immunofluorescence

- Transcriptome profiling of host cells
- Formaldehyde Assisted Isolation of Regulatory Elements (FAIRE-seq)

Website <https://www.med.unc.edu/microimm/dittmerlab/> | **Field of study** Viral oncology

10/2011 – 11/2014 Roma, Italy

PHD STUDENT IN EXPERIMENTAL MEDICINE Department of Experimental Medicine, Sapienza University of Rome (Italy)

Laboratory of Prof. Alberto Faggioni, tutor Prof. Pankaj Trivedi

- Epstein-Barr virus (EBV) and Kaposi's sarcoma-associated herpesvirus (KSHV)
- microRNA profiling

Website https://web.uniroma1.it/dip_dms/ | **Field of study** Viral oncology |

Thesis Role of Epstein-Barr virus in the pathogenesis of Primary Effusion Lymphoma (PEL)

03/2011 – 11/2011 Roma, Italy

INTERNSHIP IN LABORATORY OF VIRAL ONCOLOGY (PROF. ALBERTO FAGGIONI) Department of Experimental Medicine, Sapienza University of Rome (Italy)

- Viral Oncology
- microRNA profiling

Website https://web.uniroma1.it/dip_dms/ | **Field of study** Viral oncology

08/2010 – 02/2011 Roma, Italy

INTERNSHIP IN LABORATORY OF BIOPHYSICS (PROF. FRANCESCA GRASSI) Department of Physiology and Pharmacology "Vittorio Erspamer", Sapienza University of Rome (Italy)

- Patch Clamp Techniques

Website <https://web.uniroma1.it/dff/it> | **Field of study** Electrophysiology

08/2007 – 06/2010 Pavia, Italy

MASTER DEGREE IN NEUROBIOLOGY University of Pavia (Italy)

- Neuropathology
- Neuroimmunology
- Neurophysiology
- Neuropharmacology
- Neuropsychology
- Neuroanatomy
- Cognitive Neurosciences

Laboratory of Neuropathology of Prof. Mauro Ceroni

Website <https://dbb.unipv.it/neurobiologia-laurea-magistrale/> | **Field of study** Neurobiology |

Thesis Implicazione della localizzazione nucleare di SOD1 e Bcl-2 nella patogenesi della SLA

08/2002 – 10/2007 Perugia, Italy

BACHELOR DEGREE IN BIOLOGICAL SCIENCES University of Perugia (Italy)

- Molecular and Cell Biology
- Microbiology
- Immunology
- Genetics
- Biochemistry
- Human and Animal Anatomy
- Human, Animal and Plant Physiology
- Inorganic and Organic Chemistry

Website <http://www.dccb.unipg.it/laurea-in-scienze-biologiche> | **Field of study** Biological Sciences |

Thesis Implicazione dello stress ossidativo nella patogenesi della Sclerosi Laterale Amiotrofica

● LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C1
FRENCH	C1	C1	B1	B1	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● PUBLICATIONS

2024

[**Molecular mechanisms of naringenin modulation of mitochondrial permeability transition acting on F1FO-ATPase and counteracting saline load-induced injury in SHRSP cerebral endothelial cells**](#)

Nesci S, Algieri C, Tallarida MA, Stanzione R, Marchi S, Pietrangelo D, Trombetti F, D'Ambrosio L, Forte M, Cotugno M, Nunzi I, **Bigi R**, Maiuolo L, De Nino A, Pinton P, Romeo G, Rubattu S.
Eur J Cell Biol. 2024 Feb 15;103(2):151398

2024

[**Disentangling multiple sclerosis phenotypes through Mendelian disorders: A network approach**](#)

Bellucci G, Buscarinu MC, Reniè R, Rinaldi V, **Bigi R**, Mechelli R, Romano S, Salvetti M, Ristori G.
Mult Scler. 2024 Mar;30(3):325-335

2023

[**Antibody response elicited by the SARS-CoV-2 vaccine booster in patients with multiple sclerosis: Who gains from it?**](#)

Schiavetti I, Inglese M, Frau J, Signoriello E, Caleri F, Stromillo ML, Ferrò MT, Rilla MT, Gandoglia I, Gazzola P, Bricchetto G, Pasquali L, Grimaldi L, Ulivelli M, Marinelli F, Cordera S, Clerico M, Conte A, Salvetti M, Battaglia MA, Franciotta D, Uccelli A, Sormani MP; CovaXiMS Study Group.
Eur J Neurol. 2023 Aug;30(8):2357-2364.

2023

[**FGFR2c Upregulation Contributes to Cancer-Associated Fibroblast Program Activation and to Enhanced Autophagy in Actinic Keratosis-Derived Dermal Fibroblasts: A Possible Role in Precancerous Cell/Stromal Cell Crosstalk**](#)

Guttieri L, Raffa S, Salerno G, **Bigi R**, Persechino F, Visco V, Torrisi MR, Ranieri D, Belleudi F.
Biology (Basel). 2023 Mar 16;12(3):463

2022

[**Breakthrough SARS-CoV-2 infections after COVID-19 mRNA vaccination in MS patients on disease modifying therapies during the Delta and the Omicron waves in Italy**](#)

Sormani MP, Schiavetti I, Inglese M, Carmisciano L, Laroni A, Lapucci C, Visconti V, Serrati C, Gandoglia I, Tassinari T, Perego G, Bricchetto G, Gazzola P, Mannironi A, Stromillo ML, Cordioli C, Landi D, Clerico M, Signoriello E, Cocco E, Frau J, Ferrò MT, Di Sapio A, Pasquali L, Ulivelli M, Marinelli F, Pizzorno M, Callari G, Iodice R, Liberatore G, Caleri F, Repice AM, Cordera S, Battaglia MA, Salvetti M, Franciotta D, Uccelli A; CovaXiMS study group.
eBioMedicine 2022 Jun; 80: 104042.

2022

[**Multiple sclerosis genetic and non-genetic factors interact through the transient transcriptome**](#)

Umeton R, Bellucci G, **Bigi R**, Romano S, Buscarinu MC, Reniè R, Rinaldi V, Pizzolato Umeton R, Morena E, Romano C, Mechelli R, Salvetti M, Ristori G.
Sci Rep 2022; 12: 7536.

2022

[Exosome-Encased Nucleic Acid Scaffold Chemotherapeutic Agents for Superior Anti-Tumor and Anti-Angiogenesis Activity](#)

McNamara RP, Eason AB, Zhou Y, **Bigi R**, Griffith JD, Costantini LM, Rudek MA, Anders NM, Damania BA, Dittmer DP. *ACS Bio Med Chem Au* 2022, 2, 2, 140–149

2022

[Late-Onset MS: Disease Course and Safety-Efficacy of DMTs](#)

Buscarinu MC, Reniè R, Morena E, Romano C, Bellucci G, Marrone A, **Bigi R**, Salvetti M, Ristori G. *Front Neurol* 2022; 13: 829331.

2021

[Effect of SARS-CoV-2 mRNA vaccination in MS patients treated with disease modifying therapies](#)

Sormani MP, Inglese M, Schiavetti I, Carmisciano L, Laroni A, Lapucci C, Da Rin G, Serrati C, Gandoglia I, Tassinari T, Perego G, Bricchetto G, Gazzola P, Mannironi A, Stromillo ML, Cordioli C, Landi D, Clerico M, Signoriello E, Frau J, Ferrò MT, Di Sapio A, Pasquali L, Olivelli M, Marinelli F, Callari G, Iodice R, Liberatore G, Caleri F, Repice AM, Cordera S, Battaglia MA, Salvetti M, Franciotta D, Uccelli A; CovaXiMS study group on behalf of the Italian Covid-19 Alliance in MS. *EBioMedicine* 2021 Oct; 72: 103581.

2021

[Multiple Sclerosis and SARS-CoV-2: Has the Interplay Started?](#)

Bellucci G., Rinaldi V., Buscarinu M.C., Reniè R., **Bigi R.**, Pellicciari G., Morena E., Romano C., Marrone A., Mechelli R., Salvetti M., Ristori G. *Front Immunol* 2021, 12:755333

2021

[MAIT Cells and Microbiota in Multiple Sclerosis and Other Autoimmune Diseases](#)

Mechelli R., Romano S., Romano C., Morena E., Buscarinu M.C., **Bigi R.**, Bellucci G., Reniè R., Pellicciari G., Salvetti M., Ristori G. *Microorganisms* 2021, 9(6):1132

2021

[A Case of Double Standard: Sex Differences in Multiple Sclerosis Risk Factors](#)

Angeloni B., **Bigi R.**, Bellucci G., Mechelli R., Ballerini C., Romano C., Morena E., Pellicciari G., Reniè R., Rinaldi V., Buscarinu M.C., Romano S., Ristori G., Salvetti M. *Int J Mol Sci* 2021, 22(7):3696

2020

[SARS-CoV-2 meta-interactome suggests disease-specific, autoimmune pathophysiologies and therapeutic targets](#)

Bellucci G., Ballerini C., Mechelli R., **Bigi R.**, Rinaldi V., Reniè R., Buscarinu M.C., Baranzini S.E., Madireddy L., Matarese G., Salvetti M., Ristori G. *F1000Research* 2020, 9:992

2020

[Reworking GWAS Data to Understand the Role of Nongenetic Factors in MS Etiopathogenesis](#)

Mechelli R, Umeton R, Manfrè G, Romano S, Buscarinu MC, Rinaldi V, Bellucci G, **Bigi R**, Ferraldeschi M, Salvetti M, Ristori G. *Genes (Basel)*. 2020 Jan 14;11(1):97

2019

[Kinome profiling of non-Hodgkin lymphoma identifies Tyro3 as a therapeutic target in primary effusi](#)

Wong JP, Stuhlmiller TJ, Giffin LC, Lin C, **Bigi R**, Zhao J, Zhang W, Bravo Cruz AG, Park SI, Earp HS, Dittmer DP, Frye SV, Wang X, Johnson GL, Damania B. *Proc Natl Acad Sci U S A*. 2019 Aug 13;116(33):16541-16550.

2019

[Targeting mTOR with MLN0128 Overcomes Rapamycin and Chemoresistant Primary Effusion Lymphoma](#)

Caro-Vegas C, Bailey A, **Bigi R**, Damania B, Dittmer DP
MBio. 2019 Feb 19;10(1). pii: e02871-18

2019

[Extracellular vesicles from Kaposi Sarcoma-associated herpesvirus lymphoma induce long-term endoth](#)

McNamara RP, Chugh PE, Bailey A, Costantini LM, Ma Z, **Bigi R**, Cheves A, Eason AB, Landis JT, Host KM, Xiong J, Griffith JD, Damania B, Dittmer DP
PLoS Pathog. 2019 Feb 4;15(2):e1007536.

2018

[Epstein-Barr virus enhances genome maintenance of Kaposi sarcoma-associated herpesvirus](#)

Bigi R, Landis JT, An H, Caro-Vegas C, Raab-Traub N, Dittmer DP
PNAS. 2018 Nov 14. pii: 201810128

2018

[Kaposi's Sarcoma-Associated Herpesvirus Latency Locus Renders B Cells Hyperresponsive to Secondary](#)

Sin SH, Eason AB, **Bigi R**, Kin Y, Kang S, Tan K, Seltzer TA, Venkataramanan R, An H, Dittmer DP
J Virol. 2018 Sep 12;92(19).

2017

[Antimicrobial sulphonamides clear latent Kaposi sarcoma herpesvirus infection and impair MDM2-p53](#)

Angius F, Piras E, Uda S, Madeddu C, Serpe R, **Bigi R**, Chen W, Dittmer DP, Pompei R, Ingiani A
J Antibiot (Tokyo). 2017 Aug;70(9):962-966

2015

[Epstein-Barr virus infection induces miR- 21 in terminally differentiated malignant B cells](#)

Anastasiadou E, Garg N, **Bigi R**, Yadav S, Lapenta C, Spada M, Campese A, Ferretti E, Belardelli F, Cuomo L, Frati L, Faggioni A, Trivedi P
Int J Cancer. 2015 Feb 20

2014

[Vironomics: The study of viral genomics in human cancer and disease](#)

Dittmer DP, Yang D, Sanders M, Xiong J, Texier J, **Bigi R**
Next Generation Sequencing in Cancer Research, Volume 2 (Springer), pp 345-366, December 2014 (Book Chapter)

2012

[Differential regulation of miR-21 and miR-146a by Epstein-Barr virus-encoded EBNA2](#)

Rosato P, Anastasiadou E, Garg N, Lenze D, Boccellato F, Vincenti S, Severa M, Coccia EM, **Bigi R**, Cirone M, Ferretti E, Campese AF, Hummel M, Frati L, Presutti C, Faggioni A, Trivedi P
Leukemia. 2012 nov;26(11):2343-52.

2011

[Modulation of the Ca\(2+\) permeability of human endplate acetylcholine receptor-channelPublications](#)

Piccari V, Deflorio C, **Bigi R**, Grassi F, Fucile S
Cell Calcium. 2011 Apr;49(4):272-8

● **DIGITAL SKILLS**

Microsoft Office

Microsoft Word | Microsoft Excel | CLC Workbench | Microsoft Powerpoint

Biological Analysis Software

GraphPad Prism | Imaris | IPA

● **DRIVING LICENCE**

Driving Licence: B

● **CONFERENCES AND SEMINARS**

Conferences

Speaker at the 6th European Seminar in Virology (EuSeV). Talk title: "Epstein-Barr virus (EBV) enhances plasmid maintenance of Kaposi Sarcoma-associated Herpesvirus (KSHV)"

Speaker and poster presentation at the 20th International Workshop on Kaposi's Sarcoma Herpes Virus and Related Agents. Abstract and talk title: "Epstein-Barr virus increases cell proliferation and enhances Latency-Associated Nuclear Antigen expression in primary effusion lymphoma cell lines"

Speaker and poster presentation in the 19th International Workshop on Kaposi's Sarcoma Herpes Virus and Related Agents. Abstract and talk title: "Epstein-Barr virus increases the expression of Latency-Associated Nuclear Antigen (LANA) in dually-infected Primary Effusion Lymphoma cell lines"

● **HONOURS AND AWARDS**

Review Editor for Frontiers in Neurology since 01 Oct 2020

2021

Pilot Study grant from FISM for research activity in Multiple Sclerosis

● **ORGANISATIONAL SKILLS**

Organisational skills

Sense of organization achieved in planning experiments during my work in research labs Good skills in planning cooperative working

● **COMMUNICATION AND INTERPERSONAL SKILLS**

Communication and interpersonal skills

Excellent communication skills and team spirit, developed in four internship in scientific laboratories working as an active part of the team

● **JOB-RELATED SKILLS**

Job-related skills

■ Good skills in Western Blotting, cell culture methods and RNA extraction (achieved during the internship for Bachelor and Master Degree)

■ Skills in Patch Clamp techniques (achieved during the internship in the Biophysics laboratory)

■ Good skills in qPCR, Northern Blotting, transfection techniques, FAIRE-seq, Immunofluorescence, 3D

Immunofluorescence and Gene Expression Analysis (achieved during the internship for PhD, in

both Italian and American laboratories)■ Good skills in Digital-qPCR, Nucleofection techniques, CRISP-Cas9

techniques, mice working and STORM microscopy (achieved during Post Doctoral position in USA)

● **OTHER SKILLS**

Other skills

Active Working as a volunteer in Italian Red Cross (2006-2010)
Passionate reader
Archery

Roma, 25/09/24

f.to Rachelele Bigi