

## CURRICULUM VITAE : IVANA MUNITIĆ, MD, PhD

Professional address: Laboratory for Molecular Immunology, Department of Biotechnology  
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Web site: <http://www.optineurin-neuroimmunology.uniri.hr>

### EDUCATION

- 2004-2006 Ph. D. in immunology at the University René Descartes-Paris 5, Paris, France.  
Thesis title: Determinants Relevant for Development and Activation of T Cells  
(Détermination de signaux requis pour le développement et l'activation des cellules T).
- 1997-1998 Internship for physicians.
- 1991-1997 M.D. at School of Medicine, Zagreb, Croatia.

### CURRENT POSITIONS

- 2019- Head of the Division for Molecular and System Biomedicine, Department of Biotechnology,  
University of Rijeka, Croatia.
- 2018- Associate Professor, Department of Biotechnology, University of Rijeka, Croatia.
- 2014- Head of the Laboratory of Molecular Immunology, Department of Biotechnology,  
University of Rijeka, Croatia.
- 2013-2018 Assistant Professor, Department of Biotechnology, University of Rijeka, Croatia.

### PREVIOUS EMPLOYMENT

- 2009-2012 Research Fellow. Laboratory of Immune Cell Biology, National Cancer Institute, National  
Institutes of Health, Bethesda, MD, USA.
- 2005-2009 Postdoctoral Fellow. INSERM U591, Laboratory of Differentiation and Physiology of T  
lymphocytes. Necker Institute/University René Descartes-Paris 5, Paris, France.
- 2000-2004 Postdoctoral Fellow. Laboratory of Immune Cell Biology, National Cancer Institute. National  
Institutes of Health. Bethesda, MD, USA.
- 1998-1999 Research and Teacher Associate. Department of Pathophysiology, School of Medicine,  
Zagreb, Croatia.
- 1995-1997 Undergraduate Research Assistant. Department of Pathophysiology, School of Medicine,  
Zagreb, Croatia.
- 1993-1994 Undergraduate Research Assistant. Department of Biochemistry, School of Medicine, Zagreb,  
Croatia.

### FELLOWSHIPS AND AWARDS

- 2005-2007 Marie Curie Incoming Fellowship, European Union.
- 2000-2004 Fogarty International Fellowship, USA.

1995-1997 Award for Excellence in Academic performance, University of Zagreb, Croatia.

## TEACHING ACTIVITIES

- 2016- Neuroimmunology, course leader at the Department of Biotechnology, University of Rijeka, Croatia.  
2016- Introduction to Scientific Research, guest lecturer at the Department of Biotechnology, University of Rijeka, Croatia.  
2015- Immunology, course leader at the Department of Biotechnology, University of Rijeka, Croatia.  
2015- Capstone Course in Pathophysiology, guest lecturer, University of Minnesota Summer School collaboration with University of Rijeka, Croatia; held in Croatia.  
2015- Methodology of Scientific Research (for graduate students), course leader at the Department of Biotechnology, University of Rijeka, Croatia.  
2013-2015 Immunotherapy, course leader at the Department of Biotechnology, University of Rijeka, Croatia.  
2013-2016 Introduction to Scientific Research, course leader at the Department of Biotechnology, University of Rijeka, Croatia.  
1998-1999 Pathophysiology, assistant teacher at the Department of Pathophysiology, School of Medicine, Zagreb, Croatia.

## GRANTS AND OTHER FUNDING

- 2019 ICGEB funding for organizing Scientific symposium: Joint ICGEB – ALS Society of Canada Symposium on inflammation and proteinopathy in ALS/FTD spectrum disorder (Rijeka, 2020)  
2019-2023 Croatian Science Foundation grant for the project: Controlling neurodegeneration by modulating the crosstalk between inflammation and proteinopathy  
2019-2023 Obtained funding for a PhD student through a contest financed by Croatian Science foundation “Project of developing careers of young scientists: education of new PhD students”  
2019-2022 Support of the University of Rijeka (“UniRi grant”) for the project: Generation and molecular characterization of *in vitro* and *in vivo* amyotrophic lateral sclerosis models  
2014-2017 Croatian Science Foundation Installation grant for the project: Elucidating the Role of Optineurin in Neuroprotection.  
2014-2018 Obtained funding for a PhD student through a contest financed by Croatian Science foundation “Project of developing careers of young scientists: education of new PhD students”  
2014-2017 Support of the University of Rijeka (“UniRi grant”) for the project: Elucidating the Role of Optineurin in Neuroinflammation and Cytoprotection.  
2016 Erasmus+ exchange program with University of Laval, Canada.

## MEMBERSHIPS IN SCIENTIFIC SOCIETIES

- 2015 Croatian Neuroscience Society (Hrvatsko Društvo za Neuroznanost, HDN)  
2014 American Association of Immunologists (AAI)  
2014 Croatian Society for Biochemistry and Molecular Biology (Hrvatsko Društvo za Biokemiju i Molekularnu Biologiju, HDBMB)  
2013 European Federation of Immunological Societies (EFIS)  
2013 Croatian Immunological Society (Hrvatsko Imunolosko Društvo, HID)

## MEMBERSHIPS IN SCIENTIFIC CONSORTIA

- 2019- COST Action: Biomaterials And Advanced Physical Techniques For Regenerative Cardiology And  
Neurology (BIONECA)  
2018- project MinE

## INVITED TALKS

- 2019 Optineurin Dysfunction in Amyotrophic Lateral Sclerosis, HDBMB Crossroads in Life Sciences, Lovran, Croatia.  
2019 Optineurin Dysfunction in Neurodegeneration, Mind & Brain, Pula, Croatia.  
2019 Immunity in Amyotrophic Lateral Sclerosis, International Conference on Neurological Disorders and Neurorestoration, Dubrovnik, Croatia.  
2019 Neuroimmunology of ALS, 4<sup>th</sup> Croatian Neuroimmunological Congress with international participation, Opatija, Croatia.  
2019 Neurodegeneration and Immunity, Diagnostics and Therapy of Motor Neuron Disorders, Zagreb, Croatia.  
2018 Immunology in ALS: historic overview and future perspectives; Dilemmas in neurology, Poreč, Croatia.  
2018 The role of optineurin in Amyotrophic Lateral Sclerosis, Congress of Croatian Laboratory Animal Science Association “Laboratory Animals in Scientific Research”, Zagreb, Croatia.  
2018 Vaccination: scientific foundations, Faculty for Humanities, and Social Sciences, University of Rijeka, Croatia.  
2018 Developing new mouse models for studying amyotrophic lateral sclerosis, Annual meeting of Croatian Laboratory Animal Science Association (CroLASA), Zagreb, Croatia.  
2017 Characterization of the role of optineurin in neurodegeneration, 13<sup>th</sup> Symposium of the André-Delambre Foundation, Montreal, Canada.  
2017 Elucidating the role of optineurin in amyotrophic lateral sclerosis, Laval University, CERVO Brain, Research Centre Quebec City, Canada.  
2017 Animal Models of Amyotrophic Lateral Sclerosis, Croatian National Academy of Sciences and Arts 1<sup>st</sup> Rijeka Forum on Neurodegenerative Diseases, Rijeka, Croatia.  
2017 Elucidating the role of optineurin in neuroprotection, Croatian Science Foundation installation grant presentation, Medical Faculty, University of Rijeka, Croatia.  
2017 Molecular characterization of mouse optineurin insufficiency models, Regional meeting of clinicians and basic scientists that work on ALS, Ljubljana, Slovenia.  
2016 Experiences and challenges of young researchers in biomedicine, Faculty for Humanities, and Social Sciences, University of Rijeka, Croatia.  
2016 Immune system in the brain: more important than we thought, Open day of the Department of Biotechnology, University of Rijeka, Croatia.  
2014 A Mouse Model of Optineurin Insufficiency, 10<sup>th</sup> Symposium of the André-Delambre Foundation, Amyotrophic Lateral Sclerosis: Causes and Therapeutic Perspectives, Montreal, Canada.  
2014 New functions of dendritic cells: novel DC with T cell attributes (T<sub>DC</sub>) and DC regulation by glucocorticoids during sepsis, Symposium of the Croatian National Academy of Sciences, “New discoveries in immunology and hematology”, Rijeka, Croatia.

## SYMPOSIA AND ROUNDTABLE ORGANISATION

- 2019 STEM: Today for Tomorrow 2, Department of Biotechnology, University of Rijeka  
2018 STEM: Today for Tomorrow, Department of Biotechnology, University of Rijeka  
2018 2<sup>nd</sup> Meeting Of Basic Researchers And Clinicians Working On ALS from Slovenia and Croatia, Department of Biotechnology, University of Rijeka  
2016 International Symposium: Translation of Basic Immunology and Neuroscience Tools to Therapies: Where are We Now?; Croatian Academy for Sciences and Arts, Rijeka, and University of Rijeka,

- Croatia.  
2016 Roundtable: Interdisciplinary approach to complex diseases, Rijeka, Croatia.  
2016 International symposium for young neuroscience researchers: 20<sup>th</sup> Young Neuroscientists Meeting, Rijeka, Croatia.

## REVIEWER FOR INTERNATIONAL JOURNALS

Brain Communications  
Journal of Neuroinflammation  
Frontiers in Immunology  
Immunity, Inflammation and Disease  
Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration  
Trends in Immunology  
Neurological Sciences  
Stem Cell Reviews and Reports  
British Journal of Pharmacology  
Biochimica et Biophysica Acta  
British Journal of Pharmacology

## GUEST EDITOR

2017-2018 guest editor for special Topic in Frontiers in Immunology (together with Dr. Andrew Smith and Dr. Folma Buss): The Role of Optineurin in Immunity and Immune-Mediated Diseases.

<https://www.frontiersin.org/research-topics/6554/the-role-of-optineurin-in-immunity-and-immune-mediated-diseases>

## GRANT REVIEWER

- 2017- Lifelong learning program, University of Rijeka  
2016- Croatian Science Foundation grants

## CURRENT COLLABORATIONS

1. Jonathan D. Ashwell (National Cancer Institute, National Institutes of Health, Bethesda, USA).
2. Jasna Kriz (CERVO Brain, Research Centre Quebec City, Canada).
3. Emanuele Buratti (ICGEB, Trieste, Italy)
4. Zagreb ENCALS Center headed by prof. dr. Ervina Bilić (Clinical hospital center Zagreb, Croatia)

## COMPLETED COURSES

- 2015 Advanced BD FACS Aria™ III Operator Training BD European Training Center in Erembodegem, Belgium  
2008 *In Vivo* Non-Linear Microscopy - Foundations and Applications. Institute Curie, Paris, France.  
2004 Vaccines. Foundation of Advanced Education in Science course. National Institutes of Health, Bethesda, MD, USA.  
2002 Molecular and Cellular Mechanisms of Immunity-II. Foundation of Advanced Education in Science course. National Institutes of Health, Bethesda, MD, USA.

- 2000 Molecular and Cellular Mechanisms of Immunity. Foundation of Advanced Education in Science course. National Institutes of Health, Bethesda, MD, USA.
- 1998 Molecular Medicine (Summer School). Dubrovnik, Croatia.

## **BIBLIOGRAPHY:**

- 2019 Smith AM, Buss F, Munitic, I. Editorial: The Role of Optineurin in Immunity and Immune-Mediated Diseases. **Frontiers in Immunology** 10, 2803.
- 2019 Ban, J, Sámano C, Mladinic M, Munitic, I. Glia in amyotrophic lateral sclerosis and spinal cord injury: common therapeutic targets. **Croatian Medical Journal** 60, 109-120.
- 2019 Hancevic, M, Bilic H, Sitas D, Pavlisa G, Borovecki F, Munitic I., Bilic E. Attenuation of ALS progression during pregnancy—lessons to be learned or just a coincidence? **Neurological Sciences**, 40:1275-1278.
- 2018 Markovinovic A, Ljutic T, Beland LC, Munitic I. Optineurin Insufficiency Disbalances Proinflammatory and Anti-inflammatory Factors by Reducing Microglial IFN-beta Responses. **Neuroscience** 388:139–151.
- 2017 Markovinovic A, Cimbro R, Ljutic T, Kriz J, Rogelj B and Munitic I. Optineurin in amyotrophic lateral sclerosis: Multifunctional adaptor protein at the crossroads of different neuroprotective mechanisms. **Progress in Neurobiology**, 154, 1-20.
- 2017 Malatesti N, Munitic I., and Jurak I. *Porphyrin-based cationic amphiphilic photosensitisers as potential anticancer, antimicrobial and immunosuppressive agents.* **Biophysical Reviews**, 9(2), 149-168.
- 2016 Pourcelot M, Zemirli N, Silva Da Costa L, Loyant R, Garcin D, Vitour D, Munitic I., Vazquez A, and Arnoult, D. *The Golgi apparatus acts as a platform for TBK1 activation after viral RNA sensing.* **BMC Biology**, 14, 69.
- 2016 Meena NP, Zhu G, Mittelstadt PR, Giardino Torchia ML, Pourcelot M, Arnoult D, Ashwell JD and Munitic I. *The TBK1-binding domain of optineurin promotes type I interferon responses.* **FEBS Letters** 590, 1498-1508.
- 2015 Li CC\*, Munitic, I\*, Mittelstadt PR, Castro E, Ashwell, JD. *Suppression of dendritic cell-derived IL-12 by endogenous glucocorticoids is protective in LPS-induced sepsis,* **PLOS Biology**, 13, e1002269; \*These authors contributed equally to this manuscript.
- 2015 Giardino Torchia, ML, Munitic, I., Castro E, Herz J, McGavern DB, Ashwell, JD\*. *c-IAP ubiquitin protein ligase activity is required for 4-1BB signaling and CD8 memory T-cell survival,* **European Journal of Immunology**, 45, 2672-82.
- 2013 Munitic, I\*, Giardino Torchia, ML, Meena NP, Zhu G, Li CC, Ashwell, JD\*. *Optineurin Insufficiency Impairs IRF3 but not NF- $\kappa$ B Activation in Immune Cells,* **Journal of Immunology**, 191(12), 6231-40; \*Corresponding authors.

- 2013 Kuka, M\*, Munitic, I\*, Giardino Torchia, ML, Ashwell, JD. *CD70 is downregulated by interaction with CD27*, **Journal of Immunology**, 191(5): 2282-9; \*These authors contributed equally to this manuscript.
- 2013 Munitic, I, Kuka, M, Allam A, Scoville JP, Ashwell, JD. *CD70-deficiency impairs effector CD8 T cell generation and viral clearance but is dispensable for the recall response to LCMV*. **Journal of Immunology**, 190(3): 1169-79.
- 2012 Kuka, M, Munitic, I, Ashwell, JD. *Identification and characterization of polyclonal  $\alpha\beta$ -T cells with dendritic cell properties*. **Nature Communications**, 2012: 3: 1223.
- 2010 Munitic, I, Evaristo, C, Sung, HC, Rocha, B. *Transcriptional regulation during CD8 T-cell immune responses*. **Advances in Experimental Medicine and Biology**, 684:11-27.
- 2010 Decaluwe, H, Taillardet, M, Corcuff, E, Munitic, I, Law, HK, Rocha, B, Riviere, Y, Di Santo, JP. *Gamma(c) deficiency precludes CD8+ T cell memory despite formation of potent T cell effectors*. **Proceedings of the National Academy of Sciences**, 107(20): 9311-6.
- 2009 Munitic I\*, Decaluwe, H, Evaristo, C, Lemos, S, Wlodarczyk, M, Worth, A, Le Bon, A, Selin, LK, Riviere, Y, Di Santo, JP, Borrow, P, Rocha, B\*. *Epitope specificity and relative clonal abundance do not affect CD8 differentiation patterns during lymphocytic choriomeningitis virus infection*. **Journal of Virology**, 83(22): 11795-807; \*Corresponding authors.
- 2009 Allam, A, Conze, DB, Giardino Torchia, ML, Munitic, I, Yagita, H, Sowell, RT, Marzo, AL, Ashwell, JD. *The CD8+ memory T-cell state of readiness is actively maintained and reversible*. **Blood**, 114(10): 2121-30.
- 2007 Peixoto A, Evaristo C, Munitic I, Monteiro M, Charbit A, Rocha B. Veiga-Fernandes H. *CD8 single-cell gene co-expression reveals three different effector types present at distinct phases of the immune response*. **Journal of Experimental Medicine**, 204, 1193-205.
- 2005 Munitic I, Ryan PE and Ashwell, JD. *T cells in G1 provide a memory-like response to secondary stimulation*. **Journal of Immunology**, 174, 4010-8.
- 2004 Munitic I, Williams JA, Yang Y, Dong B, Lucas PJ, El Kassar N, Gress RE, and Ashwell JD. *Dynamic regulation of IL-7 receptor expression is required for normal thymopoiesis*. **Blood**, 104, 4165-72.
- 2002 Oro U\*, Munitic I\*, Chacko G, Karpova T, McNally J, Ashwell JD. *Regulation of constitutive T cell receptor internalization by the  $\zeta$  chain*. **Journal of Immunology**, 169(11): 6269-78; \*These authors contributed equally to this manuscript.

#### SELECTED PRESENTATIONS AND POSTERS:

- 2019 Prtenjača N, Dominović M, Markovinović A and Munitić I. Elucidating the Role of Optineurin in

- Neuroinflammation and Autophagy, Lovran, Croatia.
- 2019 Markovinovic A, Ljutic T, Béland LC, Prtenjaca N, Dominovic M and Munitic I. Loss of optineurin function in microglia leads to a disbalance in pro- and anti-inflammatory factors regulated by IFN-beta. ENCALS (European Network for the Cure of ALS), Tours, France.
- 2017 Markovinović A, Ljutic T, Milojevic T and Munitić I. Characterization of the role of optineurin in ALS. Young Neuroscientists meeting, Zagreb, Croatia.
- 2017 Markovinović A, Ljutic T, Milojevic T and Munitić I. Molecular characterization of mouse optineurin insufficiency models. ENCALS (European Network for the Cure of ALS) meeting in Ljubljana, Slovenia.
- 2016 Munitic I, Markovinovic A, and Ashwell JD. An optineurin insufficiency model of ALS. ENCALS (European Network for the Cure of ALS) meeting in Milano, Italy. **Selected Oral presentation.**
- 2015 Munitic I, Li CC, Mittelstadt PR, Castro E, and Ashwell JD. Endogenous glucocorticoids suppress dendritic cell-derived IL-12 and prevent death in LPS-induced sepsis, 4<sup>th</sup> European Congress of Immunology, Vienna, Austria. **Selected Oral presentation.**
- 2015 Markovinović A, Barukčić A, Jakopović M, Šinkovec V, Jakovac H, Grabušić K, Ashwell JD, and Munitić I. An optineurin insufficiency model as a potential tool for elucidating the pathogenesis of amyotrophic lateral sclerosis. Croatian Society for Neuroscience, Split, Croatia.
- 2015 Munitic I, Giardino Torchia ML, and Ashwell JD. Optineurin is dispensable for LPS- and Salmonella typhimurium-induced autophagy. American Associations of Immunologists, New Orleans, USA.
- 2014 Munitic I, Giardino Torchia ML, Meena NP, and Ashwell JD. Optineurin is a Positive Regulator of IFN- $\beta$ . Annual meeting of the Croatian Immunological Society, Krk, Croatia. **Selected Oral presentation.**
- 2013 Munitic I, Giardino Torchia ML, Meena NP, and Ashwell JD. A Mouse Model of Optineurin Insufficiency Exhibits Impaired Signaling via IRF3 but not NF- $\kappa$ B Activation Pathway. 4<sup>th</sup> Croatian Neuroscience Congres. Zagreb, Croatia.
- 2013 Munitic I, Giardino Torchia ML, Meena NP, and Ashwell JD. Optineurin is Indispensible for Signaling via IRF3 but not NF- $\kappa$ B Activation Pathway. 2<sup>nd</sup> Meeting on Middle-European Societies for Immunology and Allergology. Opatija, Croatia.
- 2007 Munitic, I, Le Bon A and Rocha B. Evaluating CD8 differentiation during LCMV response by a multiparametric gene expression study of individual cells. Keystone Symposium on Immunological Memory. Santa Fe, NM, USA.
- 2006 Munitic, I, Le Bon A and Rocha B. Evaluating CD8 differentiation during LCMV response by a multiparametric gene expression study of individual cells. 16th European Congress of Immunology – ECI. Paris, France.
- 2006 Munitic, I, Le Bon A and Rocha B. Single-cell multiparametric gene expression analysis of CD8 differentiation during an immune response to LCMV. DC-Thera Graduate School in St. Moritz, Switzerland. **Selected oral Presentation.**
- 2004 Munitic, I, Ryan, P and Ashwell, JD. T Cells in G<sub>1</sub> provide a memory-like response to antigen rechallenge. National Institutes of Health-Immunology Interest Group Retreat. Warrenton, VA, USA. **Selected Oral presentation.**
- 2002 Munitic, I, D’Oro U, Chacko, G, Karpova, T, McNally, J, Ashwell, JD. Enhanced Rates of Constitutive TCR Cycling in  $\zeta$ -deficient Cells. Experimental Biology 2002. Federation of American Societies for Experimental Biology Meeting (FASEB). New Orleans, LA, USA.