

## Personal information

Name: Agnieszka Włodarczyk  
Date of birth: 27.04.1988  
Place of birth: Kraków, Poland  
e-mail: awlodarczyk@health.sdu.dk

Address: Institute of Molecular Medicine, University of Southern Denmark, J.B Winsløvs vej 25,2; 5000 Odense C, Denmark

## Academic qualifications

2012 M.Sc. Jagiellonian University, Kraków, Poland  
2010 B.Sc. Jagiellonian University, Kraków, Poland

## Experience

2013-present PhD project, University of Southern Denmark (SDU), Odense, Denmark  
2012-2013 Research assistant, University of Southern Denmark (SDU), Odense, Denmark  
2012 Research assistant, Jagiellonian University, Krakow, Poland  
2011 Erasmus internship, University of Southern Denmark (SDU), Odense, Denmark  
2010-2012 M.Sc project, Jagiellonian University, Kraków, Poland  
2008-2010 B.Sc project, Jagiellonian University, Krakow, Poland  
2008 Internship, Marie Skłodowska-Curie's Institute of Oncology, Kraków, Poland

## Publications

### **Synergistic Targeting of Innate Receptors TLR7 and NOD2 for Therapeutic Intervention in Multiple Sclerosis**

Dubik, M., Marczyńska-Grzelak, J., Sørensen, M. Z., Dieu, R. S., Rusin, D., Schiöth, E. S., Ramazani, B., Belal, R., Ojha, B., Krieger, J., Arengoth, D. S., Włodarczyk, A., Owens, T. & Khoroshii, R., Jul 2024, In: International Journal of Molecular Sciences. 25, 13, 10 p., 7462.

### **Microglial TNFR2 signaling regulates the inflammatory response after CNS injury in a sex-specific fashion**

Raffaele, S., Pedersen, E. T., Laursen, C. C. H., Gao, H., Andersen, K. M., Nielsen, P. V., Orti-Casan, N., Blichfeldt-Eckhardt, M. R., Koch, S., Deb-Chatterji, M., Magnus, T., Stubbe, J., Madsen, K., Meyer, M., Degn, M., Eisel, U. L. M., Włodarczyk, A., Fumagalli, M., Clausen, B. H. & Brambilla, R. & 1 others, Lambertsen, K. L., Feb 2024, In: Brain, Behavior, and Immunity. 116, p. 269-285

### **Microglia-Derived Insulin-like Growth Factor 1 Is Critical for Neurodevelopment**

Rusin, D., Becirovic, L. V., Lyszczarz, G. T., Krueger, M., Benmamar-Badel, A., Mathiesen, C. V., Schiöth, E. S., Lambertsen, K. L. & Włodarczyk, A., 18. Jan 2024, In: Cells. 13, 2, 184.

### **Peripherally-derived myeloid cells induce disease-dependent phenotypic changes in microglia**

Pedersen, E. T., Carney, B., Włodarczyk, A., Brambilla, R. & Lambertsen, K. L., 14. Dec 2023, In: Frontiers in Cellular Neuroscience. 17, 12 p., 1295840.

### **Systemic treatment with a selective TNFR2 agonist alters the central and peripheral immune responses and transiently improves functional outcome after experimental ischemic stroke**

Thougaard, E., Nielsen, P. V., Forsberg, A., Phuong, V., Velasco, A. M., Włodarczyk, A., Wajant, H., Lang, I., Mikkelsen, J. D., Clausen, B. H., Brambilla, R. & Lambertsen, K. L., 17. Nov 2023, In: Journal of Neuroimmunology. 385, 578246.

### **Detrimental role of type I interferon-activated microglia in Neuromyelitis Optica.**

Włodarczyk, A., Khoroshii, R., Marczyńska, J., Holtman, I., Burton, M., Jensen, K. N., Thomassen, M., Eggen, B., Asgari, N. & Owens, T., 1. Jul 2021, In: Glia. 69, Suppl. 1, p. E470-E471 T14-053C.

### **Protective microglial subset in development, aging and disease**

Benmamar-Badel, A., Owens, T. & Włodarczyk, A., 1. Jul 2021, In: Glia. 69, Suppl. 1, p. E574 1 p.

### **Innate Signaling in the CNS Prevents Demyelination in a Focal EAE Model**

Dubik, M., Marczyńska, J., Mørch, M. T., Webster, G., Jensen, K. N., Włodarczyk, A., Khorrooshi, R. & Owens, T., 3. Jun 2021, In: *Frontiers in Neuroscience*. 15, 10 p., 682451.

### **Type I interferon-activated microglia are critical for neuromyelitis optica pathology**

Włodarczyk, A., Khorrooshi, R. M. H., Marczyńska, J., Holtman, I. R., Burton, M., Jensen, K. N., Blaabjerg, M., Meyer, M., Thomassen, M., Eggen, B. J. L., Asgari, N. & Owens, T., Apr 2021, In: *Glia*. 69, 4, p. 943-953

### **Microglia-Secreted Factors Enhance Dopaminergic Differentiation of Tissue- and iPSC-Derived Human Neural Stem Cells**

Schmidt, S. I., Bogetoft, H., Ritter, L., Agergaard, J. B., Hammerich, D., Kabiljagic, A. A., Włodarczyk, A., Lopez, S. G., Sørensen, M. D., Jørgensen, M. L., Okarmus, J., Serrano, A. M., Kristensen, B. W., Freude, K., Owens, T. & Meyer, M., 9. Feb 2021, In: *Stem Cell Reports*. 16, 2, p. 281-294

### **An Experimental Model of Neuromyelitis Optica Spectrum Disorder–Optic Neuritis: Insights Into Disease Mechanisms**

Soerensen, S. F., Wirenfeldt, M., Włodarczyk, A., Moerch, M. T., Khorrooshi, R., Arengoth, D. S., Lillevang, S. T., Owens, T. & Asgari, N., 2021, In: *Frontiers in Neurology*. 12, 11 p., 703249.

### **Protective roles for myeloid cells in neuroinflammation**

Owens, T., Benmamar-Badel, A., Włodarczyk, A., Marczyńska, J., Mørch, M. T., Dubik, M., Arengoth, D. S., Asgari, N., Webster, G. & Khorrooshi, R., Nov 2020, In: *Scandinavian Journal of Immunology*. 92, 5, 7 p., e12963.

### **Absence of miRNA-146a Differentially Alters Microglia Function and Proteome**

Martin, N. A., Hyrlov, K. H., Elkjaer, M. L., Thygesen, E. K., Włodarczyk, A., Elbaek, K. J., Aboo, C., Okarmus, J., Benedikz, E., Reynolds, R., Hegedus, Z., Stensballe, A., Svenningsen, Å. F., Owens, T. & Illes, Z., 5. Jun 2020, In: *Frontiers in Immunology*. 11, 21 p., 1110.

### **Protective Microglial Subset in Development, Aging, and Disease: Lessons From Transcriptomic Studies**

Benmamar-Badel, A., Owens, T. & Włodarczyk, A., 3. Apr 2020, In: *Frontiers in Immunology*. 11, 19 p., 430.

### **Diffusion Kurtosis Imaging maps neural damage in the EAE model of multiple sclerosis**

Chuhutin, A., Hansen, B., Włodarczyk, A., Owens, T., Shemesh, N. & Jespersen, S. N., Mar 2020, In: *NeuroImage*. 208, 14 p., 116406.

### **CSF1R stimulation promotes increased neuroprotection by CD11c+microglia in EAE**

Benmamar-Badel, A., Włodarczyk, A., Cedile, O., Jensen, K. N., Kramer, I., Elsborg, N. B. & Owens, T., Dec 2019, In: *Scandinavian Journal of Immunology*. 90, 6, p. 4 1 p., 7.

### **Absence of miR-146a alters the function and proteome of microglia**

Hyrlov, K. H., Martin, N. A., Elkjaer, M. L., Thygesen, E. K., Włodarczyk, A., Elbaek, K. J., Okarmus, J., Benedikz, E., Stensballe, A., Svenningsen, A. F., Owens, T. & Illes, Z., 1. Sept 2019, In: *Multiple Sclerosis Journal*. 25, 2 Suppl. 1, p. 651-652 P1203.

### **An experimental model of Neuromyelitis Optica Spectrum Disorder (NMOSD)-Optic Neuritis: Insights into disease mechanisms**

Soerensen, S. F., Soelberg, K., Włodarczyk, A., Moerch, M. T., Arengoth, D. S., Owens, T. & Asgari, N., 1. Sept 2019, In: *Multiple Sclerosis Journal*. 25, 2 Suppl. 1, p. 363-364 P725.

### **CSF1R Stimulation Promotes Increased Neuroprotection by CD11c+ Microglia in EAE**

Włodarczyk, A., Benmamar-Badel, A., Cédile, O., Jensen, K. N., Kramer, I., Elsborg, N. B. & Owens, T., 10. Jan 2019, In: *Frontiers in Cellular Neuroscience*. 12, 10 p., 523.

### **A2AR antagonism in acute EAE model leads to early and more severe EAE**

Nylund, M., Vuorimaa, A., Paavilainen, H., Włodarczyk, A., Jensen, K., Hukkanen, V., Finsen, B., Owens, T. & Airas, L., 1. Oct 2018, In: *Multiple Sclerosis Journal*. 24, Suppl. 2, p. 823-824 2 p.

**Experimental demyelination and axonal loss are reduced in MicroRNA-146a deficient mice**

Martin, N. A., Molnar, V., Szilagyi, G. T., Elkjaer, M. L., Nawrocki, A., Okarmus, J., Wlodarczyk, A., Thygesen, E. K., Palkovits, M., Gallyas, F., Larsen, M. R., Lassmann, H., Benedikz, E., Owens, T., Svenningsen, A. F. & Illes, Z., 2018, In: *Frontiers in Immunology*. 9, 14 p., 490.

**Eosinophils Regulate Interferon Alpha Production in Plasmacytoid Dendritic Cells Stimulated with Components of Neutrophil Extracellular Traps**

Skrzeczynska-Moncznik, J., Zabieglo, K., Bossowski, J. P., Osiecka, O., Wlodarczyk, A., Kapinska-Mrowiecka, M., Kwitniewski, M., Majewski, P., Dubin, A. & Cichy, J., Mar 2017, In: *Journal of Interferon & Cytokine Research*. 37, 3, p. 119-128

**A novel microglial subset plays a key role in myelinogenesis in developing brain**

Wlodarczyk, A., Holtman, I., Krueger, M., Yogev, N., Bruttger, J., Khorrooshi, R. M. H., Benmamar-Badel, A., de Boer Bergsma, J., Martin, N. A., Karram, K., Kramer, I., Boddeke, E. W. G. M., Waisman, A., Eggen, B. J. L. & Owens, T., 2017, In: *The EMBO Journal*. 36, 22, p. 3292-3308

**CCL2 recruits T cells into the brain in a CCR2-independent manner**

Cédile, O., Wlodarczyk, A. & Owens, T., 2017, In: *APMIS*. 125, 11, p. 945-956

**The chemokine receptor CCR2 maintains plasmacytoid dendritic cell homeostasis**

Cédile, O., Østerby Jørgensen, L., Frank, I., Wlodarczyk, A. & Owens, T., 2017, In: *Immunology Letters*. 192, p. 72-78

**Pathologic and Protective Roles for Microglial Subsets and Bone Marrow- and Blood-Derived Myeloid Cells in Central Nervous System Inflammation**

Wlodarczyk, A., Cédile, O., Jensen, K. N., Jasson, A., Mony, J. T., Khorrooshi, R. & Owens, T., 8. Sept 2015, In: *Frontiers in Immunology*. 6, 11 p., 463.

**The inhibitory effect of secretory leukocyte protease inhibitor (SLPI) on formation of neutrophil extracellular traps**

Zabieglo, K., Majewski, P., Majchrzak-Gorecka, M., Wlodarczyk, A., Grygier, B., Zegar, A., Kapinska-Mrowiecka, M., Naskalska, A., Pyc, K., Dubin, A., Wahl, S. M. & Cichy, J., 27. Apr 2015, In: *Journal of Leukocyte Biology*. 98, 1, p. 99-106

**Microglial regulation of CNS inflammation**

Owens, T., Khorrooshi, R. M. H., Mørch, M., Wlodarczyk, A., Hermansen, C. & Steckelings, U. M., Jan 2015, In: *Irish Journal of Medical Science*. 184, S1, p. 5 1 p., S1.2.

**CD11c(+) microglia are potent producers of IGF-1 during postnatal neurodevelopment**

Wlodarczyk, A., Martin, N. & Owens, T., 2015, In: *Glia*. 63, S1, p. E253 1 p., T08-43B.

**Thymic CCL2 influences induction of T-cell tolerance**

Cédile, O., Løbner, M., Toft-Hansen, H., Frank, I., Wlodarczyk, A., Irla, M. & Owens, T., Dec 2014, In: *Journal of Autoimmunity*. 55, p. 73-85

**The role of metalloproteinase ADAM17 in regulating ICOS ligand-mediated humoral immune responses**

Marczynska, J., Ozga, A., Wlodarczyk, A., Majchrzak-Gorecka, M., Kulig, P., Banas, M., Michalczyk-Wetula, D., Majewski, P., Hutloff, A., Schwarz, J., Chalaris, A., Scheller, J., Rose-John, S. & Cichy, J., 15. Sept 2014, In: *The Journal of Immunology*. 193, 6, p. 2753-2763

**Comparison of microglia and infiltrating CD11c+ cells as antigen presenting cells for T cell proliferation and cytokine response**

Wlodarczyk, A., Løbner, M., Cédile, O. & Owens, T., 25. Mar 2014, In: *Journal of Neuroinflammation*. 11, 1, 9 p., 57.

**Interferons in the central nervous system: A few instruments play many tunes**

Owens, T., Khorrooshi, R. M. H., Wlodarczyk, A. & Asgari, N., Mar 2014, In: *Glia*. 62, 3, p. 339-355

### **CCL2 Chemokine in Central Tolerance**

Cedile, O., Lobner, M., Toft-Hansen, H., Frank, I., Wlodarczyk, A., Irla, M. & Owens, T., 2014, In: Scandinavian Journal of Immunology. 79, 6, p. 452-453

### **CCL2 chemokine in T cell tolerance and protection against experimental autoimmune encephalomyelitis**

Cedile, O., Lobner, M., Toft-Hansen, H., Frank, I., Wlodarczyk, A., Irla, M. & Owens, T., 2014, In: Journal of Neuroimmunology. 275, 1-2 (Special issue), p. 197-197

### **IGF1 producing CD11c(+) microglia emerge during postnatal neurodevelopment**

Wlodarczyk, A., Martin, N. & Owens, T., 2014, In: Journal of Neuroimmunology. 275, 1-2, p. 93-93

### **DNA structures decorated with cathepsin G/secretory leukocyte proteinase inhibitor stimulate IFN $\gamma$ production by plasmacytoid dendritic cells**

Skrzeczynska-Moncznik, J., Wlodarczyk, A., Banas, M., Kwitniewski, M., Zabieglo, K., Kapinska-Mrowiecka, M., Dubin, A. & Cichy, J., 2013, In: American Journal of Clinical and Experimental Immunology. 2, 2, p. 186-94

### **Neuromyelitis optica-like pathology is dependent on type I interferon response**

Khorooshi, R., Wlodarczyk, A., Asgari, N. & Owens, T., 2013, In: Experimental Neurology. 247, p. 744-747

### **Secretory leukocyte proteinase inhibitor-competent DNA deposits are potent stimulators of plasmacytoid dendritic cells: implication for psoriasis**

Skrzeczynska-Moncznik, J., Wlodarczyk, A., Zabieglo, K., Kapinska-Mrowiecka, M., Marewicz, E., Dubin, A., Potempa, J. & Cichy, J., 15. Aug 2012, In: The Journal of Immunology. 189, 4, p. 1611-7 7 p.

## **Activities**

### **12 th ISNI Congress in Mainz**

Wlodarczyk, A. (Participant)  
9. Nov 2014 → 13. Nov 2014

### **42nd Scandinavian society for immunology**

Wlodarczyk, A. (Speaker)  
11. Jun 2014 → 14. Jun 2014

### **MS Symposium 2014**

Wlodarczyk, A. (Speaker)  
16. Jan 2014

### **15h International Congress of Immunology**

Wlodarczyk, A. (Participant)  
22. Aug 2013 → 27. Aug 2013

### **XI European Meeting on Glial Cells in Health and Disease (GLIA 2013) July 3 – 6 2013, Berlin, Germany**

Wlodarczyk, A. (Participant)  
3. Jul 2013 → 6. Jul 2013

### **Danish Brain Research Laboratories Meeting (OAK), Copenhagen**

Wlodarczyk, A. (Speaker)  
14. Jun 2013 → 15. Jun 2013

### **41st Scandinavian Society for Immunology Meeting**

Wlodarczyk, A. (Participant)  
14. Apr 2013 → 17. Apr 2013

