

Prof. Mgr. Vítězslav Bryja, Ph.D.

CURRENT POSITION

Since 2019 **Professor, head of the Section of Animal Physiology and Immunology, Dept. of Experimental Biology**, Faculty of Science, Masaryk University (MU), Brno, Czech Republic

WORK EXPERIENCE

2014 – 2019 **Associate Professor**, Department of Experimental Biology, Faculty of Science, MU
2007 – 2014 **Research scientist**, Department of Experimental Biology, Faculty of Science, MU
2007 – now **Research scientist**, Institute of Biophysics, Academy of Sciences of the Czech Republic
2004 – 2007 **Postdoctoral fellow**, Laboratory of Molecular Neurobiology, Dept. of Molecular Biochemistry and Biophysics, Karolinska Institute, Stockholm, Sweden
2000 – 2004 **Research scientist**, Institute of Experimental Medicine, Academy of Sciences of the Czech Republic, Prague
2000 – 2004 **Research scientist**, Center of Cell Therapy and Tissue Replacement, Charles University, Prague
2000 – 2002 **Junior research scientist**, Institute of Animal Physiology and Genetics, Academy of Sciences of the Czech Republic, Liběchov

EDUCATION

2019 **Professor in Animal Physiology**, MU, Brno
2014 **Associate Professor in Animal Physiology**, MU, Brno
2004 **Ph.D. in Neurosciences**, Charles University, Prague
2000 **Mgr. in Molecular Biology and Genetics**, MU, Brno

RESEARCH FOCUS

Identification of novel cytoplasmic players and mechanisms in the Wnt signaling pathway relevant for the human disease.

Major grants received

EMBO Installation Grant: Functional analysis of dishevelledome (2008-2012), PI. 150 000 EUR

Ministry of Education, Youth and Sports of the Czech Republic (OPVK2.3): Cooperation between Masaryk University and Karolinska Institutet, Stockholm in the field of biomedicine. (CZ.1.07/2.3.00/20.0180) (2012-2015), principal investigator, 30 841 140 CZK

European Commission FP7 (Marie Curie International Training Network): WNT-mediated signal relay in stem cells and oncogenesis - from basic biology to applications (608180) (2013-2017), partner, 414 000 EUR

Czech Science Foundation: Molecular and Functional Analysis of Casein Kinase 1 Biology, GX19-28347X (EXPRO, 2019-2023), principal investigator, 49 976 000 CZK

Ministry of Education, Youth and Sports of the Czech Republic: Preclinical Progression of New Organic Compounds with Targeted Biological Activity (Preclinprogress), CZ.02.1.01/0.0/0.0/16_025/0007381 (2018-2022), Work Package leader, 108 757 479 CZK

Academic memberships

2008 – now Czech Society for Analytical Cytometry (CSAC)

2020 – now Visegrád Group Society for Developmental Biology (V4SDB); member of the board; co-founder

Scientific prizes and Awards

2021: Masaryk University Innovation Award (Masaryk University, 2021)

2021: Neuron Prize for Extraordinary Connection between Science and Business (Neuron - Fund for Support of Science)

2020: MUNI Scientist Award (Masaryk University)

2016: Neuron Impuls 2016 (Neuron - Fund for Support of Science)

2014: Prize of the President of the Czech Science Foundation for 2014 (Czech Science Foundation)

2012: Prize for the Outstanding Results in Science and Innovations for 2012 (Minister of Education, Youth and Sports of the Czech Republic)

Collaboration with Applied Sector and Patents

- Patent families:
 - **Casein Kinase 1 Inhibitors for the Treatment of B-Cell Chronic Lymphocytic Leukemia**
PCT/CZ2013/000090: Bryja, V.; Kaucká, M.; Plevová, K.; Pavlová, Š.; Pospíšilová, Š.; Kozubík, A. EP2882437 (B1); CA 2876908
 - **4—(1h—imidazol—5—yl)—1h-pyrrolo (2, 3-b) pyridines for use in the treatment of leukaemias, lymphomas and solid tumors**
PCT/EP2019/057595: Bryja, V.; Janovská, P.; Gregorová, M.; Němec, V.; Khirsariya, P.; Paruch, K. : AU 2019246220 B2; EP 3774795B1; JP 7008967; US 11498920; KR102465111, CA3085967C
- Spin-off company:
CasInvent Pharma, a.s. (since 2020) – co-founder and shareholder; for more information see www.casinvent.com

Teaching

- Head of the doctoral study programme Animal Physiology, Immunology and Developmental biology, MU
- Long-term teaching experience in various subject (Physiology of Cell Systems, Developmental Biology of Animals, Cell and Tissue Cultures, Mechanisms of Carcinogenesis, Biology of the Animal Cell)
- Student supervision and mentoring at the bachelor, master, and PhD levels
- Main guarantor of the Life Sciences Seminar Series (since 2017), a prestigious seminar series with top-expert speakers from abroad in the fields collectively called "Life Sciences"

BIBLIOGRAPHY

> 130 impacted papers, > 5200 citations, h-index: 42 (WoS)

Selected publications in the past 5 years

- S Hankeova, N Van Hul, J Laznovsky, E Verboven, K Mangold, N Hensens, C Adori, E Verhoef, T Zikmund, F Dawit, M Kavkova, J Salplachta, M Sjöqvist, B Johansson, M Hassan, L Fredriksson, K Baumgärtel, V Bryja, U Lendahl, A Jheon, F Alten, K Fahnehjelm, B Fischler, J Kaiser, ER Andersson. Sex differences and risk factors for bleeding in Alagille syndrome. **EMBO Mol Med.** 2022 Nov 8;e15809. doi: 10.15252/emmm.202215809. **IF(2021) 14.005**
- N Dani, RH Herbst, C McCabe, G Green, K Kaiser, J Head, J Cui, FB Shipley, A Jang, D Dionne, L Nguyen, C Rodman, SJ Riesenfeld, J Prochazka, M Prochazkova, R Sedlacek, F Zhang, V Bryja, O Rozenblatt-Rosen, N Habib, A Regev, MK Lehtinen. A cellular and spatial map of the choroid plexus across brain ventricles and ages. **Cell.** 2021. Apr 27;S0092-8674(21)00438-4. doi: 10.1016/j.cell.2021.04.003. **IF(2021) 66.850, highly cited**
- T Radaszkiewicz, M Nosková, K Gömöryová, O V. Blanářová, KA Radaszkiewicz, M Picková, R Víchová, T Gybel', K Kaiser, L Demková, L Kučerová, T Bárta, D Potěšil, Z Zdráhal, K Souček, V Bryja. RNF43 inhibits WNT5A-driven signaling and suppresses melanoma invasion and resistance to the targeted therapy. **Elife.** 2021 Oct 27;10:e65759. doi: 10.7554/eLife.65759. **IF(2021) 8.713**
- A Kotrbová, P Ovesná, T Gybel', T Radaszkiewicz, M Bednaříková, J Hausnerová, E Jandáková, L Minář, I Crha, V Weinberger, L Záveský, V Bryja, V Pospíchalová. WNT signaling inducing activity in ascites predicts poor outcome in ovarian cancer. **Theranostics** 2020; 10(2):537-552. doi:10.7150/thno.37423. **IF(2020) 11.556**
- K Kaiser, D Gyllborg, J Procházka, A Salašová, P Kompaníková, FL Molina, R Laguna-Goya, TW Radaskiewicz, J Harnoš, M Procházková, D Potěšil, RA Barker, Á Gato Casado, Z Zdráhal, R Sedláček, E Arenas, JC Villaescusa, V Bryja. WNT5A is transported via lipoprotein particles in the cerebrospinal fluid to regulate hindbrain morphogenesis. **Nature Comm.** 2019 Apr 2;10(1):1498. doi: 10.1038/s41467-019-09298-4. **IF(2019) 12.121**
- K Kaiser, D Gyllborg, J Procházka, A Salašová, P Kompaníková, FL Molina, R Laguna-Goya, TW Radaskiewicz, J Harnoš, M Procházková, D Potěšil, RA Barker, Á Gato Casado, Z Zdráhal, R Sedláček, E Arenas, JC Villaescusa, V Bryja. WNT5A is transported via lipoprotein particles in the cerebrospinal fluid to regulate hindbrain morphogenesis. **Nature Comm.** 2019 Apr 2;10(1):1498. doi: 10.1038/s41467-019-09298-4. **IF(2019) 12.121**
- Harnoš J, Caňizal MCA, Holler C, Jurásek M, Dublād J, Gömöryová K, Hanáková K, Bernatík O, Trantírek L, Gybel' T, Fiedler M, Ryneš J, Dave Z, Fernandez-Llamazares AI, Zdráhal Z, Tripsianes K, Vácha R, Schambony A, Hoffmann C, Bryja V. Dishevelled-3 protein conformation dynamics analyzed by FRET-based biosensors: a key role of casein kinase 1. **Nature Comm.** 2019 Apr 18;10(1):1804. doi: 10.1038/s41467-019-09651-7. **IF(2019) 12.121**
- Janovska P, Verner J, Kohoutek J, Bryjova L, Gregorova M, Dzimkova M, Skabrahova H, Radaszkiewicz T, Ovesna P, Vondalova Blanarova O, Nemcova T, Hoferova Z, Vasickova K, Smyckova L, Egle A, Pavlova S, Poppova L, Plevova K, Pospisilova S, Bryja V. Casein kinase 1 is a therapeutic target in chronic lymphocytic leukemia; **Blood.** 2018 Mar 15;131(11):1206-1218. doi: 10.1182/blood-2017-05-786947. Epub 2018 Jan 9. **IF(2018) 16.601**