

TUDOR CONSTANTIN BADEA M.D., M.A., Ph.D.



Positions held:

Scientific Director, Research and Development Institute, Faculty of Medicine, Transilvania University of Brasov, Romania, **Since March 2024**

Senior Researcher (CS I), Research and Development Institute, Faculty of Medicine, Transilvania University of Brasov, Romania, **Since May 2023**

Senior Researcher (CS II), National Center for Brain Research, ICIA, Romanian Academy, **Since June 2022**

Senior Researcher (CS II), Research and Development Institute, Faculty of Medicine, Transilvania University of Brasov, Romania, **September 2021 - May 2023**

Investigator, Head of Retinal Circuits Development and Genetics Unit, N-NRL, National Eye Institute, NIH, Bethesda Maryland, **September 2010 – August 2021**

Instructor, Department of Immunopathology, University “Iuliu Hatieganu”, School of Medicine, Cluj-Napoca, Romania, **January 1995 - January 2001**

Academic training:

Habilitation in the field of Medicine, Transilvania University of Brasov, Romania, **June 2022**

Postdoctoral Fellow, Howard Hughes Medical Institute, Department of Molecular Biology and Genetics, School of Medicine, Johns Hopkins University, Baltimore **May 2004 – August 2010**

Doctor of Philosophy (PhD), Biochemistry, Cell and Molecular Biology, School of Medicine, Johns Hopkins University, Baltimore **June 1999 – May 2004**

Master of Arts (MA), Biological Sciences, Columbia University, New York **January 1998 – June 1999**

Research Fellow, Department of Pathology, Medical School, University of Maryland at Baltimore **March 1995 - January 1998**

Internship Clinical Laboratory, Medical Clinic No.1, School of Medicine Cluj-Napoca, Romania **December 1994 - February 1995**

Medical Doctor (MD), University “Iuliu Hatieganu”, School of Medicine Cluj-Napoca, Romania **September 1988 - September 1994**

Online Profiles:

https://scholar.google.com/citations?user=enO60_gAAAAJ&hl=en

https://www.researchgate.net/profile/Tudor_Badea

<https://publons.com/researcher/1366808/tudor-constantin-badea/>

<https://www.brainmap.ro/tudor-constantin-badea>

<http://www.transilvanianeurogenetics.ro/>

Research experience and Skills:

Neurobiology:

- Generation of complex genetic marking systems in the mouse for analysis of neuronal cell morphology and function.
- Conditional gene ablation combined with reporter gene expression for mosaic analysis of expression pattern and developmental functions of transcription factors in neurons.
- Computer assisted reconstruction of neuronal dendrite and axonal arbors; description and discrimination of neuronal morphologies by statistical analysis of morphological traits.
- Analysis of neuronal population firing by correlation of action potential generation with live imaging of changes in intracellular calcium concentrations in neurons using brain slice preparations.

- Analysis of Retinal Ganglion Cell physiology by multi electrode array recordings in response to visual stimuli.
- Analysis of visual function in wild type and mutant mice, using commercial and novel behavior apparatus.
- Analysis of neuronal morphologies and function by retrograde and anterograde labeling, using fluorescent markers (DiI and fluorescently conjugated Cholera toxin B), or AAV delivered reporters.
- Gain and loss of function manipulations using in vivo gene delivery techniques.
- Blastomere fate mapping/lineage tracing in *Xenopus tropicalis* embryos.

Molecular Biology

- Cell culture of immortalized cell lines, primary oligodendrocyte precursors, C2C12 myoblasts, and mouse embryonic stem cells.
- Mouse embryonic stem cell targeting for knock-in constructs; conditional gene activation by Cre recombination; generation of transgenic mouse lines.
- In situ hybridization/immunohistochemistry for the analysis of developmentally regulated genes.
- Regulatory mechanisms of gene expression in tissue culture systems in vitro: northern analysis, ribonuclease protection assay, promoter activity studies by transient transfection of reporter gene constructs and DNA binding assays.
- Molecular cloning for RNA or protein expression, bacterial cell culture, bacteriophage work
- Gene cloning by differential display of mRNA, RACE and cDNA library screening.
- Gene expression profiling using RNASeq, analysis of Deep Sequencing data.
- Generation and purification of fusion proteins and generation and purification of polyclonal antibodies
- Affinity chromatography, Ion exchange chromatography, fractionation of samples.
- ELISA, Western Blotting, study of protein – protein interactions using yeast two hybrid assays and protein pull-downs combined with mass spectrometry.

Clinical and Experimental Immunology:

- Isolation and purification of blood cell subpopulations; immunohistology; indirect immunofluorescence studies for clinical immunology. Evaluating Auto-Immune antibodies in Lupus and Vasculitis syndromes
- Production and purification of Monoclonal Antibodies from Ascites or serum free cultures of hybridomas.
- In vitro studies of inflammatory mediators action on cell cycle, gene expression and differentiation programs of primary muscle and glial cell cultures.

Computational Skills:

- Comfortable with Mac OS, Windows and Unix environments, including command line scripts
- Expert User – Microsoft Office and Libre Office Suites
- Image processing using ImageJ/Fiji (including programming macros and plugins), Matlab, Adobe suite (Illustrator, Photoshop, Acrobat), Gimp and Inkscape
- Large data analysis, using embedded functions and scripts in Matlab, R and a variety of Python Packages: applications to Deep Sequencing datasets, Electrophysiological Recordings with large multielectrode arrays, neuronal arbor morphological analysis, and animal behavior data analysis.
- Basic level knowledge of C++, Javascript

Data synthesis and Communication Skills:

- Analysis and summary of data across a broad array of fields, ranging across Multichannel electrophysiology, Deep Sequencing/gene expression profiling, cell morphometry and animal behavior.
- Delivered presentations in international congresses and invited lectures at various universities
- Prepared Oral and Poster Presentations of various lengths and scopes
- Authored book chapters and publications, including figures

Language Proficiency: Romanian, English, German, French – Advanced Reading, Writing, Speaking
Italian, Spanish – Basic Reading, Speaking

Other training:

Tempus Program Internship in Immunology and Infectious Diseases. December 1- 31 1993

Kantonspital Basel, Department of Infectious Diseases, University Basel
(Laboratory of Werner Zimmerli)

Third Central European Summer School of Immunology September 1994
Kosice, Slovak Republic
Under the sponsorship of the International Union of Immunological Societies,
Basel Institute of Immunology and Gesellschaft für Immunologie (Class of Lucien Aarden)

Teaching experience:

Delivered lectures and directed laboratory sections for the Immunology course in the School of Medicine, Spring Semester 1995
University “Iuliu Hatieganu,” Cluj-Napoca, Romania
Conducted research on antigen specificity in autoimmune vasculitis syndromes.

Teaching assistant – Lead discussion sections 1998-1999 academic year
and graded in the Neurobiology Course (Darcy Kelley and Stuart Firestein), Columbia University, New York

Teaching assistant – Graded and student discussions in the Genetics 2002-2004 academic years
course (Jeremy Nathans and Roger Reeves), Medical School at Johns Hopkins University

Lecturer - Neuroscience Fall 2022 Semester
Universitatea Transilvania Brasov - Faculty of Electrical Engineering and Computer Science - Robotics
Bachelor of Science Program

Lecturer - Neuroscience Fall 2022 Semester
Polytechnic University of Bucharest - Faculty of Medical Engineering - Medical Engineering & Modern
Technologies for Medical Engineering Master of Science Programs

Mentoring/Supervisor/Manager activity:

National Institutes of Health (2010 - 2021)

- Lead a group of biomedical researchers for 10 years. Participated in recruitment and management committees at NEI and NIH levels for several years. Train PhD, Postdoctoral, Master and Bachelor students. All trainees have secured jobs in Academia, Biotech companies or Medical School / Residency Fellowship, etc.

Five Postdoctoral Fellows: Friedrich Kretschmer, Alireza Ghahari, Vladimir Muzyka, Manvi Goel, Raluca Pascalau.

PhD students: Graduate partnership Program with UBB Cluj, Romania: Miruna Ghinia, Szilard Sajgo, On advisory committee (mentors: Samer Hattar, Phyllis Robinson, UMBC, Maryland): Preethi Somasundaram, Alexis Rubin.

Two M.Sc. Students: Walid Chatila (Georgetown) and Momina Tariq (George Mason)

Eight Postbac Fellows: Melody Shi, Sumit Kumar, Oluwaseyi Motajo, Katherine Chuang, Eileen Nguyen, Rebecca Lees, Annie Fuller, Armaan Akbar.

Four Undergraduates: Nadia Parmhans, Beverly Wu, Esika Savsani, Tyger Lin

Transylvania University of Brasov (2021 - present)

- Leading a group of biomedical researchers (2 Postdoctoral fellows, 6 PhD students, 1 Master student, several undergraduates and volunteers).

Awards:

1. Young Investigator Award at the XVII International Complement Workshop October 11-16, 1998 Rhodes, Greece
2. First prize - poster presentation at the Gordon Research Conference on Visual Development, Salve Regina, Rhode Island, US, August 10-15, 2008
3. Ten Years Service Award – United States of America Government - 2020
4. Romanian Academy Award 2022: Premiul „Nicolae Simionescu“ Suită de 22 lucrări (2015-2020): Un concept unitar pe baza studiilor celulelor retinale ganglionare (CRG), neuronii care transmit informația vizuală de la ochi la creier Autor: Tudor Constantin Badea

Membership in Societies and Professional Organizations:

Howard Hughes Medical Institute – Research Associate 2005 - 2010.

American Association of the Advancement of Science – Since 1996.

Society for Neuroscience – Since 2001.

American Physiological Society – Since 2017

Association for Research in Vision and Ophthalmology – Since 2011

Stadtman Tenure Track Investigator Recruitment Committee – 2012 – 2013

Animal Care and Use Committee - NEI – 2012-2020

Romanian Society for Neuroscience - since 2022

Federation of European Neuroscience Societies - Since 2022

Referee for Scientific Journals, Tenure Evaluation and Granting Agencies:

Reviewer for: Acta Histochemica; Biochimica et Biophysica Acta; BMC Biology; BMC Molecular Brain; BMC Molecular Medicine; Cell Death and Disease; Cellular and Molecular Life Sciences; Developmental Dynamics; Developmental Biology; eNeuro; FEBS Letters; Genesis; Graefe's Archiv; Journal of Comparative Neurology; Journal of Neuroscience; Journal of Neurophysiology; Molecular Vision; Molecular Cellular Neuroscience; Molecular Medicine; Nature Communications; Neuroscience; Pigment Cell and Melanoma Research; PLOS One; Proceedings of the National Academy of Sciences (USA); Proceedings of the Royal Society (B)

Editorial Board: PLOSOne, Frontiers in Neuroscience (Neurodevelopment section)

Evaluated grant proposals for:

Agence Nationale de Recherche (France); Association Retina France; Wellcome Funds (UK); Royal Netherlands Academy of Arts and Sciences; Israel Science Foundation; Marie Curie postdoctoral fellowship.

Served as referent for tenure/promotion Committees: Baylor College of Medicine, University of Texas – McGovern Medical School and University of Virginia.

Patents:

(WO/2006/110748) RESPONSE GENE TO COMPLEMENT 32 (RGC-32) IN DISEASE
THE UNIVERSITY OF MARYLAND, BALTIMORE, Inventors: Rus, Horea, Badea, Tudor
Fosbrink, Matthew.

Genetic Mouse Models developed are being distributed through Jax Mice to more than 350 labs in 15 countries (as of 2014).

Funding history

1) Graduate and postdoctoral studies – Howard Hughes Medical Institute as part of the lab of Jeremy Nathans – Johns Hopkins

2) NEI Investigator 2011 - 2021 Intramural research awards = Retinal Circuit Development & Genetics Unit, Project numbers 1ZIAEY000504-01 - 11 (ranging from 900,000 – 1,800,000 US\$)

3) Project coordinator - PN-III-P4-PCE-2021-0333 "Dezvoltarea Si Functia Acuitatii Vizuale Centrale"- "Development and Function of High Acuity Central Vision" - UNIVERSITATEA TRANSILVANIA BRASOV (RO)

4) Project member - PN-III-P2-2.1-PED-2021-1323 "Noi nanostructuri proteice hibride pentru direcționarea specifică în celulele tumorale ale colonului", "New protein hybrid nanostructures for specific targeting in colon tumor cells" UNIVERSITATEA BUCURESTI (RO) Partener (P1) - UNIVERSITATEA TRANSILVANIA BRASOV; Partener (P2) - INSTITUTUL NATIONAL DE CERCETARE - DEZVOLTARE PENTRU FIZICA MATERIALELOR BUCURESTI RA Coordonator proiect - Claudia Gabriela CHILOM

5) Project Representative for Transilvania University of Brasov in the national project: "Dezvoltarea cercetării genomice în România – ROGEN"

Invited Seminars:

July 2012 - College De France - Paris – France - (Dr. Alain Prochiantz)

August 2012 – Harvard Neurobiology – Boston (Dr. Michael Tri Do)

October 2012 – University of Pennsylvania – Philadelphia (Dr. Noga Vardi)

November 2012 – Columbia University – College of Physicians and Surgeons –New York (Drs. Carol Mason and Oliver Hobert).

March 2013 – George Washington University (Anthony LaMantia) and University of Maryland Baltimore County (Phyllis Robinson).

May 2013 – SUNY Upstate Medical University of New York (Barry Knox)

September 2015 - Baylor College of Medicine (Ross Poche).

November 2017 Washington University at St. Louis School of Medicine, Neuroscience program (Daniel Kerschensteiner).

April 2018 Zongshan Ophthalmic Center, Sun Yat-Sen University, China (Chun-Qiao Liu)

April 2018 Riken Brain Science Institute, Tokyo, Japan (Tomomi Shimogori)

September 2019 Genentech Inc., San Francisco (Henri Jasper)

December 2020 NERF/VIB, Leuven, Belgium (Karl Farrow)

June 2021 NeuroPSI - Paris-Saclay Institute of Neuroscience, Paris-Saclay University, France (Muriel Perron)

September 2024 - Neuroscience Institute Cavalieri Ottolenghi (NICO), University of Turin, Italy

Summary of Achievements:

PhD thesis: "A genetic strategy for the study of neuronal cell types and their development" - Biochemistry, Cell and Molecular Biology Program, Johns Hopkins University School of Medicine, May 2004. Thesis advisor jeremy Nathans

Book Chapters: 2

ISI indexed papers (WOS core collection) = 108 of which

ISI indexed (WOS core collection) peer reviewed manuscripts = 66

ISI indexed (WOS core collection) meeting abstracts = 42
Patents: 1

Publications:

Book Chapters:

1. Niculescu, F., **Badea, T.**, and Rus, H., (1998) Sublytic C5b-9 complexes induce proliferation of human aortic smooth muscle cells. Role of mitogen activated protein kinase and phosphatidylinositol 3-kinase. Proceedings of XIII World Congress of Cardiology. Monduzzi Editore, Bologna, pp1185-1190.
2. **Badea T.C.**, and Nathans J. (2008) New genetic technologies for studying the morphology, physiology, and development of mouse retinal neurons. Eye, Retina, and Visual System of the Mouse. Chalupa, L.M. and Williams, R.W., Editors. MIT Press, Cambridge, Massachussets.

Peer Reviewed Research Articles

1. Rodgers J., Hughes S., Ebrahimi A, Allen AE, Storch R, Lindner M., Peirson S.N., Badea T.C., Hankins M.W., Lucas R.J. (2024) Enhanced restoration of visual code after targeting on bipolar cells compared to retinal ganglion cells with optogenetic therapy. Molecular Therapy 2025 Jan <https://doi.org/10.1016/j.ymthe.2025.01.030> & bioRxiv doi: <https://doi.org/10.1101/2024.07.22.604613>
2. Tatomir A, Vlaicu S, Nguyen V, Luzina IG, Atamas SP, Drachenberg C, Papadimitriou J, Badea TC, Rus HG, Rus V. (2024) RGC-32 mediates proinflammatory and profibrotic pathways in immune-mediated kidney disease. Clin Immunol. 2024 Jun 13:110279. doi: [10.1016/j.clim.2024.110279](https://doi.org/10.1016/j.clim.2024.110279)
<https://doi.org/10.1016/j.clim.2024.110279>
3. Nishida K, Matsumura S, Uchida H, Abe M, Sakimura K, Badea TC, Kobayashi T. (2023) Brn3a controls the soma localization and axonal extension patterns of developing spinal dorsal horn neurons. PLoS One. 2023 Sep 21;18(9):e0285295. doi: [10.1371/journal.pone.0285295](https://doi.org/10.1371/journal.pone.0285295)
<https://doi.org/10.1371/journal.pone.0285295>
4. Soucy JR, Aguzzi EA, Cho J, Gilhooley MJ, Keuthan C, Luo Z, Monavarfeshani A, Saleem MA, Wang XW, Wohlschlegel J; **RReSTORE Consortium**; Baranov P, Di Polo A, Fortune B, Gokoffski KK, Goldberg JL, Guido W, Kolodkin AL, Mason CA, Ou Y, Reh TA, Ross AG, Samuels BC, Welsbie D, Zack DJ, Johnson TV. (2023) Retinal ganglion cell repopulation for vision restoration in optic neuropathy: a roadmap from the RReSTORE Consortium. Mol Neurodegener. 2023 Sep 21;18(1):64. doi: [10.1186/s13024-023-00655-y](https://doi.org/10.1186/s13024-023-00655-y)
<https://doi.org/10.1186/s13024-023-00655-y>

5. Paşcalău R, Badea TC (2023) Signaling – transcription interactions in mouse retinal ganglion cells early axon pathfinding –a literature review, *Front. Ophthalmol.*, 2023 May 17; doi: 10.3389/fopht.2023.1180142
<https://doi.org/10.3389/fopht.2023.1180142>
6. Kiyama T, Altay HY, Badea TC, Mao CA (2023) Pou4f1-Tbr1 transcriptional cascade controls the formation of Jam2-expressing retinal ganglion cells. *Front. Ophthalmol.*, 2023 May 18; doi: 10.3389/fopht.2023.1175568
<https://doi.org/10.3389/fopht.2023.1175568>
7. Boobalan E, Thompson AH, Alur RP, McGaughey DM, Dong L, Shih G, Vieta-Ferrer ER, Onojafe IF, Kalaskar VK, Arno G, Lotery AJ, Guan B, Bender C, Memon O, Brinster L, Soleilhavoup C, Panman L, Badea TC, Minella A, Lopez AJ, Thomasy SM, Moshiri A, Blain D, Hufnagel RB, Cogliati T, Bharti K, Brooks BP. (2022) Zfp503/Nlz2 Is Required for RPE Differentiation and Optic Fissure Closure. *Invest Ophthalmol Vis Sci.* 2022 Nov 1;63(12):5. doi: 10.1167/iovs.63.12.5. & BioRxiv doi: 10.1101/2022.03.28.486078
<https://doi.org/10.1167/iovs.63.12.5>
8. Tatomir A, Cuevas J, **Badea TC**, Muresanu DF, Rus V, Rus H (2022) Role of RGC-32 in multiple sclerosis and neuroinflammation – few answers and many questions, *Frontiers in Immunology* doi: 10.3389/fimmu.2022.979414
<https://doi.org/10.3389/fimmu.2022.979414>
9. Tien NW, Vitale C, **Badea TC**, Kerschensteiner D, (2022) Layer-specific developmentally precise axon targeting of transient suppressed-by-contrast retinal ganglion cells bioRxiv doi: 10.1101/2021.11.26.470118 & *J. of Neuroscience* doi: 10.1523/JNEUROSCI.2332-21.2022
<https://doi.org/10.1523/JNEUROSCI.2332-21.2022>
10. Vlaicu SI, Tatomir A, Fosbrink M, Nguyen V, Boodhoo D, **Badea TC**, Rus V, Rus H.(2022) RGC-32' dual role in smooth muscle cells and atherogenesis. *Clinical Immunology* 238 (2022) 22 April 2022
<https://doi.org/10.1016/j.clim.2022.109020>
11. Chuang JZ, Yang N, Otsu W, Fu C, Nakajima N, Yang HH, Lee MP, Akbar AF, **Badea TC**, Guo Z, Nuruzzaman A, Hsu KS, Dunaief JL, Sung CH (2021). Retinal pigment epithelium-specific CLIC4 mutant is a mouse model of dry age-related macular degeneration. *Nat Commun* 13, 374 (2022).
<https://doi.org/10.1038/s41467-021-27935-9>
12. Goel M, Aponte AM, Wistow G, **Badea TC**. (2021) Molecular studies into Copine-4 function in Retinal Ganglion Cells, *PLOSOne*, 16(11): e0255860, doi: 10.1371/journal.pone.0255860 & *bioRxiv*(2021), doi: 10.1101/2021.08.09.455730 .

<https://doi.org/10.1371/journal.pone.0255860>

13. Liu S, Aldinger KA, Cheng CV, Kiyama T, Dave M, McNamara HK, Zhao W, Stafford JM, Descostes N, Lee P, Caraffi SG, Ivanovski I, Errichiello E, Zweier C, Zuffardi O, Schneider M, Papavasiliou AS, Perry MS, Humberson J, Cho MT, Weber A, Swale A, **Badea TC**, Mao C-A, Garavelli L, Dobyns WB, and Reinberg D. (2021) NRF1 Association with AUTS2-Polycomb Mediates Specific Gene Activation in the Brain. *Mol Cell*. Vol 81 (22): 4663-4676.e8 Nov 18. doi: 10.1016/j.molcel.2021.09.020. & *bioRxiv*, (2021): doi: 10.1101/2021.03.30.437620

<https://doi.org/10.1016/j.molcel.2021.09.020>

14. Luzina IG, Rus V, Lockatell V, Courneya JP, Hampton BS, Fischelevich R, Misharin AV, Todd NW, **Badea TC**, Rus, H, Atamas SP (2022) Regulator of Cell Cycle protein (RGCC/RGC-32) protects against pulmonary fibrosis. *American Journal of respiratory Cell and Molecular Biology* (AJRCMB). vol 66 (2):146–157, February 2022 doi: 10.1165/rcmb.2021-0022OC (online ahead of print:2021 Oct 20).

<https://doi.org/10.1165/rcmb.2021-0022OC>

15. Muzyka, VV, **Badea TC**. (2021) Genetic Interplay Between Transcription Factor Pou4f1/Brn3a and Neurotrophin Receptor Ret In Retinal Ganglion Cell Type Specification. *Neural Development* vol 16: 5 September 21, doi: 10.1186/s13064-021-00155-z, & *bioRxiv*, no. (2020): 2020.03.23.004242. doi: 10.1101/2020.03.23.004242.

<https://doi.org/10.1186/s13064-021-00155-z>

16. Tatomir A, Beltrand A, Nguyen V, Courneya, JP, Boodhoo D, Cudrici C, Muresanu DF, Rus V, **Badea TC**, Rus H (2021) RGC-32 acts as a hub to regulate the transcriptomic changes associated with astrocyte development and reactive astrogliosis. *Frontiers in Immunology* – Jul 29;12:705308. doi: 10.3389/fimmu.2021.705308. eCollection 2021.

<https://doi.org/10.3389/fimmu.2021.705308>

17. Chen CK, Kiyama T, Weber N, Whitaker CM, Pan P, **Badea TC**, Massey SC, Mao CA (2021). Characterization of Tbr2-expressing retinal ganglion cells, *J Comp Neurol* 2021 doi: 10.1002/cne.25208 & *bioRxiv*: 2020.2006.2017.153551.

<https://doi.org/10.1101/2020.06.17.153551>

18. Brodie-Kommit J, Clark BS, Shi Q, Shiao F, Kim DW, Langel J, Sheely C, Ruzycki PA, Fries M, Javed A, Cayouette M, Schmidt T, **Badea T**, Glaser T, Zhao H, Singer J, Blackshaw S, Hattar S. Atoh7-independent specification of retinal ganglion cell identity. *Sci Adv*. 2021 Mar 12;7(11):eabe4983. doi: 10.1126/sciadv.abe4983.& *bioRxiv*, no. (2020): 2020.05.27.116954. doi: 10.1101/2020.05.27.116954

<https://doi.org/10.1126/sciadv.abe4983>

19. Oliver KM, Florez-Paz DM, **Badea TC**, Mentis GZ, Menon V, de Noij JC. (2021) Molecular correlates of muscle spindle and Golgi tendon organ afferents. *Nature Communications* Mar 1;

12(1):1451 doi: 10.1038/s41467-021-21880-3 & *bioRxiv*, no. (2020): 2020.04.03.023986. doi: 10.1101/2020.04.03.023986.

<https://doi.org/10.1038/s41467-021-21880-3>

20. Tatomir A, Beltrand A, Nguyen V, Boodhoo D, Mekala A, Cudrici C, **Badea TC**, Muresanu DF, Rus V, Rus H (2021) RGC-32 regulates generation of reactive astrocytes in experimental autoimmune Encephalomyelitis. *Frontiers in Immunology* – Jan 25, doi: 10.3389/fimmu.2020.608294

<https://doi.org/10.3389/fimmu.2020.608294>

21. Parmhans N, Fuller AD, Nguyen E, Chuang K, Swygart DI, Wienbar SR, Lin T, Kozmik Z, Dong L, Schwartz GW, **Badea TC** (2021). "Identification of Retinal Ganglion Cell Types and Brain Nuclei expressing the transcription factor Brn3c/Pou4f3 using a Cre recombinase knock-in allele." *J Comp Neurol*. 2021 Jun;529(8):1926-1953. doi: 10.1002/cne.25065. Epub 2020 Nov 10.

<https://doi.org/10.1002/cne.25065>

22. Lees RN, Akbar AF, **Badea TC** (2020). "Retinal Ganglion Cell defects cause decision shifts in visually evoked defense responses". *J. Neurophysiology*, 2020 Nov 1;124(5):1530-1549. doi: 10.1152/jn.00474.2019. Epub 2020 Sep 30.

<https://doi.org/10.1152/jn.00474.2019>

23. Gheorghiu M, Stănică L, Ghinia Tegla MG, Polonschii C, Bratu D, Popescu O, **Badea T, (co-corresponding author)** Gheorghiu E. Cellular sensing platform with enhanced sensitivity based on optogenetic modulation of cell homeostasis. *Biosens Bioelectron*. 2020 Apr 15;154:112003. doi: 10.1016/j.bios.2019.112003. Epub 2019 Dec 31.

<https://doi.org/10.1016/j.bios.2019.112003>

24. Gheorghiu M, Stanica L, Polonschii C, David S, Ruckenstein A, Popescu O, **Badea T**, Gheorghiu E. Modulation of Cellular Reactivity for Enhanced Cell-Based Biosensing. *Anal Chem*. 2020 Jan 7;92(1):806-814. doi: 10.1021/acs.analchem.9b03217. Epub 2019 Dec 9. PubMed PMID: 31751507.

<https://doi.org/10.1021/acs.analchem.9b03217>

25. Goel M, Li T, **Badea TC**. Differential expression and subcellular localization of Copines in mouse retina. *J Comp Neurol*. 2019 Oct 1;527(14):2245-2262. Epub 2019 Mar 28. doi: 10.1002/cne.24684

<https://doi.org/10.1002/cne.24684>

26. Kiyama T, Long Y, Chen CK, Whitaker CM, Shay A, Wu H, **Badea T.C.**, Mohsenin A, Parker-Thornburg J, Klein WH, Mills SL, Massey SC, Mao CA. Essential Roles of Tbr1 in the Formation and Maintenance of the Orientation-Selective J-RGCs and a Group of OFF-Sustained RGCs in Mouse. *Cell Rep*. 2019 Apr 16;27(3):900-915.e5. doi: 10.1016/j.celrep.2019.03.077

<https://doi.org/10.1016/j.celrep.2019.03.077>

27. Tatomir A, Tegla CA, Martin A, Boodhoo D, Nguyen V, Sugarman AJ, Mekala A, Anselmo F, Talpos-Caia A, Cudrici C, **Badea T.C.**, Rus V, Rus H. RGC-32 regulates reactive astrocytosis and extracellular matrix deposition in experimental autoimmune encephalomyelitis. *Immunol Res.* 2018 Aug;66(4):445-461. doi: 10.1007/s12026-018-9011-x.

<https://doi.org/10.1007/s12026-018-9011-x>

28. Muzyka VV, Brooks M, **Badea T.C.** Postnatal developmental dynamics of cell type specification genes in Brn3a/Pou4f1 Retinal Ganglion Cells. *Neural Dev.* 2018 Jun 29;13(1):15. doi: 10.1186/s13064-018-0110-0.

<https://doi.org/10.1186/s13064-018-0110-0>

29. Ghahari A, Kumar SR, **Badea T.C.** Identification of Retinal Ganglion Cell Firing Patterns Using Clustering Analysis Supplied with Failure Diagnosis. *Int J Neural Syst.* 2018 Oct;28(8):1850008. doi: 10.1142/S0129065718500089. Epub 2018 Feb 22

<https://doi.org/10.1142/s0129065718500089>

30. Parmhans N, Sajgo S, Niu J, Luo W, **Badea T.C.** Characterization of retinal ganglion cell, horizontal cell, and amacrine cell types expressing the neurotrophic receptor tyrosine kinase Ret. *J Comp Neurol.* 2018 Mar 1;526(4):742-766. doi: 10.1002/cne.24367. Epub 2017 Dec 19

<https://doi.org/10.1002/cne.24367>

31. Sajgo S, Ghinia MG, Brooks M, Kretschmer F, Chuang K, Hiriyan S, Wu Z, Popescu O, **Badea T.C.** Molecular codes for cell type specification in Brn3 retinal ganglion cells. *Proc Natl Acad Sci U S A.* 2017 May 16;114(20):E3974-E3983. doi: 10.1073/pnas.1618551114. Epub 2017 May 2

<https://doi.org/10.1073/pnas.1618551114>

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