

CURRICULUM VITAE

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

Adrese:

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Date Biografice:

Locul si data nașterii: August 16, 1968, București, Romania

Naționalitate: Romana, Cetățenie: Romania, Statele Unite ale Americii

Starea Civila: Căsătorit

Profiluri Academice Internet:

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

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

<https://www.nei.nih.gov/research/research-labs-and-branches/neurobiology-neurodegeneration-repair-laboratory/retinal-circuit-development-and-genetics>

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

Experienta Profesionala:

Din Septembrie 2010

Investigator, Conducator al Sectiei "Retinal Circuits Development and Genetics"

N-NRL, National Eye Institute, NIH, Bethesda, Maryland, SUA

Mai 2004 – Septembrie 2010

Cercetator Postdoctoral, Howard Hughes Medical Institute

Department of Molecular Biology and Genetics,

School of Medicine, Johns Hopkins University, Baltimore

(Laboratorul lui Jeremy Nathans)

Martie 1995 – Decembrie 1997

Cercetator in Patologie (Research Fellow),

Department of Pathology,

Medical School, University of Maryland at Baltimore

(cu Moon L. Shin, Horea Rus and Florin Niculescu)

Martie 1995 - Ianuarie 2001

Instructor, Disciplina Imunopatologie, (Suspendat pentru studii in strainatate).

Universitatea "Iuliu Hatieganu", Facultatea de Medicina, Cluj-Napoca, Romania

Decembrie 1994 – Martie 1995

Rezident Laborator Clinic, Clinica Medicala Nr.1

Facultatea de Medicina Generala, Cluj-Napoca, Romania

Educatie:

Iunie 1999 – Mai 2004

Doctor of Philosophy (PhD), Biochimie, Biologie Celulara si Moleculara
School of Medicine, Johns Hopkins University, Baltimore, USA (Pozitia 15 Mondiala),
(Conducator Stiintific: Jeremy Nathans)

Ianuarie 1998 – Iunie 1999

Master of Arts (MA), Department of Biological Sciences
Columbia University, New York (Pozitia 7 Mondiala, Shanghai Ranking)
(Conducatori Stiintifici: Rafael Yuste and Darcy Kelley)

Septembrie 1988 - Septembrie 1994

Doctor Medic (MD), Universitatea “Iuliu Hatieganu”,
Facultatea Medicina Generala, Cluj-Napoca, Romania

Alte cursuri:

Decembrie 1- 31 1993

Tempus Program Internship in Immunology and Infectious Diseases.
Kantonspital Basel, Department of Infectious Diseases, University Basel
(Laboratorul lui Werner Zimmerli)

Septembrie 1994

Third Central European Summer School of Immunology
Kosice, Slovak Republic
Under the sponsorship of the International Union of Immunological Societies,
Basel Institute of Immunology and Gesellschaft fur Immunologie (Clasa lui Lucien Aarden)

Limba Materna: Romana,

Limbi Straine (Nivel C2): Engleza, Germana, Franceza

Limbi Straine (Nivel B1): Italiana, Spaniola

Interese Stiintifice Principale:

Neurostinte:

- Definiția completa a tipurilor celulare neuronale folosind sisteme de markeri codificați genetic in șoareci de laborator, cu scopul de a integra informații despre morfologia arborilor dendritici si axonali, parteneri sinaptici, proprietăți electrofiziologice, markeri moleculari si roluri funcționale (reflexe sau comportamente motivate vizual) in întregul animal.

Dezvoltarea Neuronala:

- Mecanismele prin care este generata diversitatea neuronală, cu emfaza pe dezvoltarea morfologiei neuronale si a conectivității. In acest scop, am pus la punct tehnici de knock-in condițional in șoareci,

tehnici de genetica combinatorie, analize de transcriptom prin secvențare profundă (deep sequencing) și exprimare forțată a moleculelor de interes in vitro și in vivo.

Patologia Bolilor Neurologice:

- Plasticitate celulară și procese regenerative, cu focus pe sistemul vizual, musculoscheletal și nervos. Descoperirile noastre din biologia dezvoltării sunt puncte de intrare pentru terapii regenerative sau de substituție.
- Mecanismele moleculare a răspunsurilor tisulare la mediatori de inflamație.
- Etiopatologia Glaucomului, abordări regenerative și de neuroprotecție

Experiența și Competențe de Cercetare:

Neurobiologie:

- Generarea de sisteme complexe de markare genetică în șoareci pentru analiza morfologiei și funcției neuronale.
- Ablație genetică condițională combinată cu expresia de gena reporter pentru analiza domeniului de expresie și funcțiilor în dezvoltare a factorilor de transcripție neuronală.
- Reconstrucția arborilor dendritici și axonali neuronală asistată de calculator; descrierea și diferențierea morfologiilor neuronale prin analiza statistică a caracteristicilor morfologice.
- Analiza activării populațiilor neuronale prin corelarea generării de potențiale de acțiune cu imagistica dinamică a concentrației de Ca^{2+} intracelular în neuroni din secțiuni de creier.
- Analiza fiziologiei celulelor retinale ganglionare prin înregistrări electrofiziologice extracelulare cu matrice de electrozi concomitente cu prezentare de stimuli vizuali.
- Analiza funcției vizuale în șoareci normali și mutați folosind aparate de analiza comportamentală.
- Analiza morfologiilor neuronale prin trasare anterogradă și retrogradă cu markeri fluorescenți (DiI și Choleratoxin B conjugat fluorescent) sau reporter de fluorescență administrați prin virusuri AAV.
- Manipulări genetice de activare sau pierdere a funcției genetice prin tehnici de manipulare genetică somatică in vivo
- Descrierea descendenților din blastomere în embrioni de *Xenopus tropicalis*.

Biologie Moleculară:

- Culturi celulare de linii celulare imortalizate, precursori de oligodendrocyte, mioblaste C2C12, și celule stem muride.
- Targeting de celule stem embrionare de șoareci prin recombinare omologă; activarea și inactivarea genetică condițională prin recombinaza Cre. Generarea de linii transgenice de șoareci.
- Hibridizare in situ și imunohistochimie pentru analiza genelor exprimate dinamic în dezvoltare.
- Mecanisme de reglare a expresiei genetice in vitro: analiza northern, test de protecție cu ribonuclează, studii de activitate de promotor prin transfecție tranzientă și teste de legare de DNA.
- Clonarea de gene prin diferențial display de mRNA, RACE și screening de biblioteci de cDNA.
- Analiza de Transcriptom folosind RNASeq,
- Generarea de proteine sintetice și generarea și purificarea de anticorpi policlonali.
- Studii de interacții de proteine folosind teste "yeast two hybrid" și co-precipitari de proteine combinate cu spectrometrie de masă.
- Design și testare de vectori AAV purtători de gene efectoare in vitro și in vivo

Imunologie Experimentală și Clinică:

- Izolarea și purificarea de subpopulații de celule sangvine; imunohistologie; imunofluorescență indirectă pentru studii de imunologie clinică. Evaluarea de anticorpi auto-imuni în sindroame vasculitice și lupus.

- Producția și purificarea de Anticorpi Monoclonali din ascite sau or culturi celulare de hybridoame.
- Studii in vitro a acțiunii mediatorilor inflamatori asupra ciclului celular, expresiei genice programelor de diferențiere musculară și gliale.

Competente de Informatica:

- Familiar cu sistemele de operare Mac OS, Windows și Unix, incluzând scripturi command line
- Utilizator expert – Microsoft Office și Libre Office
- Procesare de imagine folosind ImageJ/Fiji (inclusiv programarea de macros și plugins), Matlab, Adobe suite (Illustrator, Photoshop, Acrobat), Gimp și Inkscape
- Analiza de date, folosind funcții proprii și scripturi în Matlab și diferite programe Python: aplicate la seturi de date Deep Sequencing, Electrophysiology, analiza de arbori neuronali, și date de comportament animal.
- Cunoștințe de bază în C++, Javascript

Experiența Didactică:

Semestrul doi 1995 Ținut Cursuri Imunologie la Facultatea de Medicina, Universitatea “Iuliu Hațieganu,” Cluj-Napoca, Romania

1998-1999 Instructor asistent (Teaching assistant) – Conduc orele de discuții și corectat/evaluat examene pentru cursul de Neurobiologie (Darcy Kelley și Stuart Firestein), Columbia University, New York

2002-2004 Instructor asistent (Teaching assistant) – corectat/evaluat examene în cursul de genetica (Jeremy Nathans și Roger Reeves), Medical School at Johns Hopkins University

Activitate de Mentor de Cercetare:

În ultimii 10 ani am coordonat:

Cinci Cercetatori Postdoctorali: Friedrich Kretschmer, Alireza Ghahari, Vladimir Muzyka, Manvi Goel, Raluca Pascalau.

Patru Studenți Doctoranzi: Co-tutela cu Prof. Acad. Octavian Popescu, Universitatea Babes-Bolyai Cluj, Romania: Miruna Ghinia, Szilard Sajgo. Comitete de Teză: (Mentor principal: Phyllis Robinson, University of Maryland, Baltimore County): Preethi Somasundaram, Alexis Rubin.

Doi Studenți în Master: Walid Chatila (Georgetown) și Momina Tariq (George Mason)

Opt studenți post-colegiați (Bachelor of Science): Melody Shi, Sumit Kumar, Oluwaseyi Motajo, Katherine Chuang, Eileen Nguyen, Rebecca Lees, Annie Fuller, Armaan Akbar.

Patru Studenți de colegiu: Nadia Parmhans, Beverly Wu, Esika Savsani, Tyger Lin

Premii:

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

Membru in organizatii si asociatii profesionale:

Howard Hughes Medical Institute – Research Associate 2005 - 2010.
American Association of the Advancement of Science – Din 1996.
Society for Neuroscience – Din 2001.
American Physiological Society – Din 2017
Association for Research in Vision and Ophthalmology – Din 2011
NIH Stadtmann Tenure Track Investigator Recruitment Committee – 2012 – 2013
NEI Animal Care and Use Committee - NEI – din 2012

Referent Pentru Jurnale Stiintifice:

Referent: Acta Histochemica; Biochimica et Biophysica Acta; BMC Biology; BMC Molecular Brain; BMC Molecular Medicine; Cell Death and Disease; 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; 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: PLOS One.

Patente:

([US8227194B2](#) – 2006) Monoclonal antibodies with binding specificity for response gene to complement 32 (RGC-32) THE UNIVERSITY OF MARYLAND, BALTIMORE, Inventors: Rus, Horea, Badea, Tudor Fosbrink, Matthew.

Linii de soareci modificati genetic: peste 10 linii, multe distribuite prin Jax Mice la mai mult de 350 laboratoare in 15 tari (pina in 2014).

Granturi de Cercetare

Studii doctorale si postdoctorale – Howard Hughes Medical Institute ca parte laboratorului Jeremy Nathans – Johns Hopkins
NEI Investigator 2011 - 2020 Intramural research awards = Retinal Circuit Development & Genetics Unit, Project numbers 1ZIAEY000504-01 – 09 (intre 900,000 – 1,800,000 US\$)

Seminarii Stiintifice Sustinute la Institute de Cercetare si Universitati:

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)

Publicatii:

Capitole de Carte:

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.

Articole/ studii publicate în reviste de specialitate de circulație internațională

- 1: Cristea, A., **Badea, T.**, Bodizs, G., and Olinic, N. (1995) Antineutrophil cytoplasmic autoantibodies (ANCA) markers in diagnosis and monitoring systemic vasculitides. *Romanian Journal of Internal Medicine* 33 (1-2): 37-46.
- 2: Cristea, A., **Badea, T.**, Bodizs, G., and Olinic, N. (1995) Clinical evaluation of antineutrophil cytoplasmic autoantibodies in ANCA-associated diseases. *Journal of Clinical Laboratory Immunology* 46 (2): 85-94.
- 3: Lang, T.J., **Badea, T.C.**, Wade, R., and Shin, M.L. (1997) Sublytic terminal complement attack on myotubes decreases the expression of mRNAs encoding muscle-specific proteins. *Journal of Neurochemistry* 68 (4): 1581-1589.
- 4: Rus, H., Niculescu, F., **Badea, T.**, and Shin, M.L. (1997) Terminal complement complexes induce cell cycle entry in oligodendrocytes through mitogen activated protein kinase pathway. *Immunopharmacology* 38 (1-2): 177-187.
- 5: **Badea, T.C.**, Niculescu, F.I., Soane, L., Shin, M.L., and Rus, H. (1998) Molecular cloning and characterization of RGC-32, a novel gene induced by complement activation in oligodendrocytes. *Journal of Biological Chemistry* 273 (41): 26977-26981.
- 6: Niculescu, F., **Badea, T.**, and Rus, H. (1999) Sublytic C5b-9 induces proliferation of human aortic smooth muscle cells: role of mitogen activated protein kinase and phosphatidylinositol 3-kinase. *Atherosclerosis* 142 (1): 47-56.
- 7: Niculescu, F., Soane, L., **Badea, T.**, Shin, M., and Rus, H. (1999) Tyrosine phosphorylation and activation of Janus kinase 1 and STAT3 by sublytic C5b-9 complement complex in aortic endothelial cells. *Immunopharmacology* 42 (1-3): 187-193.
- 8: **Badea, T.**, Goldberg, J., Mao, B., and Yuste, R. (2001) Calcium imaging of epileptiform events with single-cell resolution. *Journal of Neurobiology* 48 (3): 215-227.

- 9: **Badea, T.**, Niculescu, F., Soane, L., Fosbrink, M., Sorana, H., Rus, V., Shin, M.L., and Rus, H. (2002) RGC-32 increases p34CDC2 kinase activity and entry of aortic smooth muscle cells into S-phase. *Journal of Biology Chemistry* 277 (1): 502-508.
- 10: **Badea, T.C.**, Wang, Y., and Nathans, J. (2003) A noninvasive genetic/pharmacologic strategy for visualizing cell morphology and clonal relationships in the mouse. *Journal of Neuroscience* 23 (6): 2314-2322.
- 11: **Badea, T.C.**, Park, J.H., Soane, L., Niculescu, T., Niculescu, F., Rus, H., and Shin, M.L. (2003) Sublytic terminal complement attack induces c-fos transcriptional activation in myotubes. *Journal of Neuroimmunology* 142 (1-2): 58-66.
- 12: **Badea, T.C.**, and Nathans, J. (2004) Quantitative analysis of neuronal morphologies in the mouse retina visualized by using a genetically directed reporter. *Journal of Comparative Neurology* 480 (4): 331-351.
- 13: Fosbrink, M., Cudrici, C., Niculescu, F., **Badea, T.C.**, David, S., Shamsuddin, A., Shin, M.L., and Rus, H. (2005) Overexpression of RGC-32 in colon cancer and other tumors. *Experimental Molecular Pathology* 78 (2): 116-122.
- 14: Wang, Y., **Badea, T. (co-first author)**, and Nathans, J. (2006) Order from disorder: Self-organization in mammalian hair patterning. *Proceedings of the National Academy of Sciences USA* 103 (52): 19800-19805.
- 15: Guler, A.D., Ecker, J.L., Lall, G.S., Haq, S., Altimus, C.M., Liao, H.W., Barnard, A.R., Cahill, H., **Badea, T.C.**, Zhao, H., Hankins, M.W., Berson, D.M., Lucas, R.J., Yau, K.W., and Hattar, S. (2008) Melanopsin cells are the principal conduits for rod-cone input to non-image-forming vision. *Nature* 453 (7191): 102-105.
- 16: **Badea T.C.**, Cahill H.C., Ecker J.L., Hattar S. and Nathans J. (2009) Distinct roles of transcription factors Brn3a and Brn3b in controlling the development, morphology, and function of retinal ganglion cells. *Neuron* 61: 852-864.
- 17: Ye X., Wang Y., Cahill H., Yu M., **Badea T.C.**, Smallwood P., Peachey N.S., Nathans J. (2009) Norrin, Frizzled4, and Lrp5 signaling in endothelial cells control a genetic program for retinal vascularization. *Cell* 139: 285-298.
- 18: **Badea T.C.**, (co-corresponding author) Hua L.Z., Smallwood P.M., Williams J., Rotolo T., Nathans J., (2009) New mouse lines for the analysis of neuronal morphology using CreER(T)/loxP-directed sparse labeling. *PLoS ONE* Nov 16 4(11): e7859.
- 19: **Badea T.C.**, (corresponding author) and Nathans J., (2011) Morphologies of mouse retinal ganglion cells expressing transcription factors Brn3a, Brn3b, and Brn3c: analysis of wild type and mutant cells using genetically-directed sparse labeling. *Vision Res.* 51(2):269-79. Epub 2010 Sep 6.
- 20: Matsuoka R.L., Nguyen-Ba-Charvet K.T., Parray A., **Badea T.C.**, Chedotal A., Kolodkin A.L. (2011) Transmembrane semaphorin signalling controls laminar stratification in the mammalian retina. *Nature.* 470(7333):259-63.

- 21: McNeill D.S., Sheely C.J., Ecker J.L., **Badea T.C.**, Morhardt D., Guido W., Hattar S. (2011) Development of melanopsin-based irradiance detecting circuitry. *Neural Dev.* 6:8.
- 22: Chen S.K., **Badea T. C.** (co-corresponding author), Hattar S. (2011) Photoentrainment and pupillary light reflex are mediated by distinct populations of ipRGCs. *Nature* 476: 92-96, August 4
- 23: Matsuoka, R.L., Chivatakarn, O, **Badea, T.C.**, Samuels, I.S., Cahill, H., Katayama K, Suto F, Chédotal, A., Peachey, N.S., Nathans, J, Yoshida, Y., Giger, R.J., and Kolodkin, A.L. (2011). Class 5 transmembrane semaphorins control mammalian inner retinal lamination, neurite arborization, and function. *Neuron* 2011 71, 460–473, August 11
- 24: **Badea T.C., (co-corresponding author)** Williams J, Smallwood P, Shi M, Motajo O, Nathans J. Combinatorial expression of Brn3 transcription factors in somatosensory neurons: genetic and morphologic analysis. *J Neurosci.* 2012 Jan 18;32(3):995-1007.
- 25: Shi M, Kumar SR, Motajo O, Kretschmer F, Mu X, **Badea T.C.** Genetic Interactions between Brn3 Transcription Factors in Retinal Ganglion Cell Type Specification. *PLoS One.* 2013 Oct 8;8(10):e76347.
- 26: Niu J, Ding L, Li JJ, Kim H, Liu J, Li H, Moberly A, **Badea T.C.**, Duncan ID, Son YJ, Scherer SS, Luo W. Modality-based organization of ascending somatosensory axons in the direct dorsal column pathway. *J Neurosci.* 2013 Nov 6;33(45):17691-709.
- 27: Sajgo S, Ghinia MG, Shi M, Liu P, Dong L, Parmhans N, Popescu O, **Badea T.C.** Dre - Cre sequential recombination provides new tools for retinal ganglion cell labeling and manipulation in mice. *PLoS One.* 2014 Mar 7;9(3):e91435.
- 28: Tegla CA, Cudrici CD, Nguyen V, Danoff J, Kruszewski AM, Boodhoo D, Mekala AP, Vlaicu SI, Chen C, Rus V, **Badea T.C.**, Rus H. RGC-32 is a novel regulator of the T-lymphocyte cell cycle. *Exp Mol Pathol.* 2015 Jun;98(3):328-37. Epub 2015 Mar 11.
- 29: Kretschmer F, Sajgo S, Kretschmer V, **Badea T.C.** A system to measure the Optokinetic and Optomotor response in mice. *J Neurosci Methods.* 2015 Dec 30;256:91-105. Epub 2015 Aug 14.
- 30: Chuang K, Nguyen E, Sergeev Y, **Badea T.C.** Novel Heterotypic Rox Sites for Combinatorial Dre Recombination Strategies. *G3 (Bethesda).* 2015 Dec 29;6(3):559-71.
- 31: Sajgo S, Ali S, Popescu O, **Badea T.C.** Dynamic expression of transcription factor Brn3b during mouse cranial nerve development. *J Comp Neurol.* 2016 Apr 1;524(5):1033-61. Epub 2015 Sep 29.
- 32: Wang X, Zhao L, Zhang J, Fariss RN, Ma W, Kretschmer F, Wang M, Qian HH, **Badea T.C.**, Diamond JS, Gan WB, Roger JE, Wong WT. Requirement for Microglia for the Maintenance of Synaptic Function and Integrity in the Mature Retina. *J Neurosci.* 2016 Mar 2;36(9):2827-42.
- 33: Ghinia MG, Novelli E, Sajgo S, **Badea TC**, Strettoi E. Brn3a and Brn3b knockout mice display unvaried retinal fine structure despite major morphological and numerical alterations of ganglion cells. *J Comp Neurol.* 2019 Jan 1;527(1):187-211. Epub 2016 Jul 29.

- 34: Keenan WT, Rupp AC, Ross RA, Somasundaram P, Hiriyanna S, Wu Z, **Badea T.C.**, Robinson PR, Lowell BB, Hattar SS. A visual circuit uses complementary mechanisms to support transient and sustained pupil constriction. *Elife*. 2016 Sep 26;5.
- 35: Ghahari A, **Badea T.C.** Robust spike sorting of retinal ganglion cells tuned to spot stimuli. *Conf Proc IEEE Eng Med Biol Soc*. 2016 Aug;2016:1745-1749.
- 36: Somasundaram P, Wyrick GR, Fernandez DC, Ghahari A, Pinhal CM, Simmonds Richardson M, Rupp AC, Cui L, Wu Z, Brown RL, **Badea T.C.**, Hattar S, Robinson PR. C-terminal phosphorylation regulates the kinetics of a subset of melanopsin-mediated behaviors in mice. *Proc Natl Acad Sci U S A*. 2017 Mar 7;114(10):2741-2746.
- 37: Wang X, Zhao L, Zhang Y, Ma W, Gonzalez SR, Fan J, Kretschmer F, **Badea T.C.**, Qian HH, Wong WT. Tamoxifen Provides Structural and Functional Rescue in Murine Models of Photoreceptor Degeneration. *J Neurosci*. 2017 Mar 22;37(12):3294-3310.
- 38: Rus V, Nguyen V, Tatomir A, Lees JR, Mekala AP, Boodhoo D, Tegla CA, Luzina IG, Antony PA, Cudrici CD, **Badea T.C.**, Rus HG. RGC-32 Promotes Th17 Cell Differentiation and Enhances Experimental Autoimmune Encephalomyelitis. *J Immunol*. 2017 May 15;198(10):3869-3877.
- 39: Kretschmer F, Tariq M, Chatila W, Wu B, **Badea T.C.** Comparison of optomotor and optokinetic reflexes in mice. *J Neurophysiol*. 2017 Jul 1;118(1):300-316.
- 40: Sajgo S, Ghinia MG, Brooks M, Kretschmer F, Chuang K, Hiriyanna 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.
- 41: 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. Epub 2017 Dec 19.
- 42: 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 Feb 22:1850008.
- 43: 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.
- 44: 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 Jul 13.
- 45: 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.
- 46: 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.

47: 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.

48: 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.

49: Lees RN, Akbar AF, **Badea TC** (2020). “Retinal Ganglion Cell defects cause decision shifts in visually evoked defense responses”. *J. Neurophysiology*, Epub 2020 Sept 30. doi:10.1152/jn.00474.2019

50: Parmhans N, Fuller AD, Nguyen E, Chuang K, Swygart DI, Wienbar SR, Lin T, Kozmik Z, Dong L, Schwartz GW, **Badea TC** (2020). 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.* 2020 Nov 2 , doi: 10.1002/cne.25065

Articole/ studii depozitate pe servere de preprint sau in revizie la diferite jurnale:

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Data

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