CURRICULUM VITAE

Ádám Légrádi, PhD

Associate Professor, Department of Cell Biology
and Molecular Medicine, University of Szeged
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Appointment Type: permanent
Pathway: Basic Science Faculty

DATE OF BIRTH: December 12, 1978

PLACE OF BIRTH: Kecskemét, Hungary

FAMILY STATUS: married, 1 child

EDUCATION:

2002-2009 Doctor of Philosophy, Summa cum laude
University of Szeged, Szeged, Hungary
Branch: Clinical medical sciences
Program: Immunology
Title of the Ph.D. thesis: Regulation of T cell signalling by galectin-1 and lyso-phosphatydilcholine
Supervisor: Prof. Eva Monostori Dr.

1997-2002 Biologist Msc., Cum Laude
Specialized in Molecular Biology and Genetics
University of Szeged Faculty of Natural Sciences, Szeged, Hungary

PROFESSIONAL EXPERIENCE:

2015 - Present: Associate Professor,
Department of Cell Biology and Molecular Medicine, Faculty of Medicine and Faculty of Sciences and Informatics, University of Szeged

2010-2015: Assistant Professor,
Department of Cell Biology and Molecular Medicine, Faculty of Medicine and Faculty of Sciences and Informatics, University of Szeged

2005 - 2010: Research Assistant Professor,
Department of Cell Biology and Molecular Medicine, Faculty of Medicine and Faculty of Sciences and Informatics, University of Szeged

2002-2005: PhD. Student
Lymphocytic Signal Transduction, Institute of Genetics, Biological Research Center of the Hungarian Academy of Sciences, Szeged

TEACHING EXPERIENCE:

TEACHING AND INSTRUCTION

Teaching and Course Instruction – University of Szeged

Year(s) of Instruction	Course ID	Course/Lecture Title	Role	Avg. Contact Hrs/Semester	Primary Learner Audience
Fall 2008 - Present	BBN137L	Cell Biology seminar	Course Leader	56	BSc students
Fall 2008 - Present	BBL037E-1	Cell Biology 1 lecture for correspondence students	Course Leader	12	BSc. students
Spring 2008- Present	BBL137L	Cell Biology practice for correspondence students	Course Leader	12	BSc. students
Spring 2018- Present	BBL038E-1	Cell Biology 2 lecture for correspondence students	Lecturer	12	Bsc. students
Spring 2008 - Present	BLALL012E-00003	Cell Biology lecture 2	Lecturer	4	BSc. students
Fall 2010 - Present	BMN200E-2	Neuroimmunology	Course leader	28	MSc. students, neurobiology specialization
Spring 2011 - Present	BMN201E-1	Molecular neurobiology	Course Leader	28	MSc. Students, neurobiology specialization course
Spring 2011 - Present	BMN200E-3	Embrional and adult stem cells	Course Leader	24	MSc. students, Neurobiology specialization course
Spring 2011 - Present	BMN201L-00002	Molecular Neurobiology Laboratory practice	Instructor	40	MSc. students, Neurobiology specialization practice
Spring 2013 - Present	YSE_TTIK-00289, BBN039L	Cell and tissue cultures practice	Instructor	40	International students, BSc. Bioengineering students
Fall 2013-present	AOK-K1011	Molecular Medicine	Lecturer	2	Medical students
Fall 2014-Present	YSE_TTIK-00239	Neuroimmunology	Course Leader	28	Erasmus and Stipendium hungaricum Msc. students
Spring 2014-Present	YSE_TTIK-00219	Molecular Neurobiology	Course leader	28	Erasmus and stipendium hungaricum students
Fsll 2014-2016	BMN009E	Cell biology Msc.	Lecturer	14	Msc. Biology students
Fall 2012-2013	XSE031	Cell Biology1	Lecturer	6	Erasmus Students

Year(s) of Instruction	Course ID	Course/Lecture Title	Role	Avg. Contact Hrs/Semester	Primary Learner Audience
Spring 2012-2013	YSE_TTIK-00160	Cell Biology 2	Lecturer	6	Erasmus students
Fall 2011-2012	AOK-K10241	Molecular neurobiology for medical students	Lecturer	4	Medical students
Fall 2017-2018	AOK-P14	Biology 1 seminar	Course leader	56	Pre- medical students
Spring 2017-2018	AOK-P14	Biology 2 seminar	Course leader	56	Pre-medical students

MENTORING AND ADVISING

Date	Mentee Name	Mentee Level/Program	Role/Involvement Type	Mentee Outcomes
2019-2021	Gergely Stefancsik	Msc. student	Mentor	Mr. Stefancsik sucessfully obtained Biology Msc. diploma, and now Phd. student at the Department of Neurology, University of Szeged
2018-2019	Boglárka Mihalik	BSc. graduate student, University of Szeged	Mentor	Ms. Mihalik has successfully obtained Biology Bsc. diploma
2018-2019	Judit Gulyás	Bsc. Bionenginering University of Szeged	Mentor	Ms. Gulyás has successfully obtained Bioenginering Bsc. diploma
2017-2019	Rebeka Kristóf	BSc. graduate student, University of Szeged	Mentor	Ms. Hébel has successfully obtained Biology Bsc. diploma
2017-2018	Ahmed Ahmed	MSc. graduate student, University of Szeged	Mentor	Mr. Mir has successfully obtained Biologist Msc. Diploma,
2016-2017	Márk Gemela	BSc. graduate student, University of Szeged	Mentor	Mr. Gemela has successfully obtained Biology Bsc. diploma
2016-2017	Mohd Yaqub Mir	MSc. graduate student, University of Szeged	Mentor	Mr. Mir has successfully obtained Biologist Msc. Diploma, and now PhD, student at Semmelweis university
2016-2017	Gabriella Hébel	BSc. graduate student, University of Szeged	Mentor	Ms. Hébel has successfully obtained Biology Bsc. diploma
2015-2016	Gábor Seres	BSc. correspondent student, University of Szeged	Mentor	Mr. Torma has successfully obtained Biology Bsc. diploma
2015-2016	Máté Velkey	BSc. graduate students, University of Szeged	Mentor	Ms. Hegedűs has successfully obtained Biology Bsc. diploma
2014 - 2015	Yuri Ishikawa	BSc. graduate students, University of Szeged	Mentor	Mr. Ischikawa has successfully obtained medical degree (MD)
2014 - 2015	Gábor Torma	BSc. graduate students, University of Szeged	Mentor	Ms. Torma has successfully obtained Biology Bsc. diploma

Date	Mentee Name	Mentee Level/Program	Role/Involvement Type	Mentee Outcomes
2014-2015	Timea Juhász	BSc. graduate students, University of Szeged	Mentor	Ms. Juhász has successfully obtained Biology BSc. diploma
2014 - 2015	Dóra Dobos	BSc. correspondent students, University of Szeged	Mentor	Mr. Dobos has successfully obtained Biology BSc. diploma
2014 - 2015	Ágnes Pásztor	BSc. correspondent students, University of Szeged	Mentor	Ms. Pásztor has successfully obtained Biologist MSc. diploma
2013-2014	Miklós Aranyás	BSc. correspondent students, University of Szeged	Mentor	Mr. Aranyás has successfully obtained Biologist MSc. diploma
2013 - 2014	Klaudia Klement	BSc. correspondent students, University of Szeged	Mentor	Ms. Klement has successfully obtained Biologist BSc. diploma
2012 - 2013	Orsolya Kovács	BSc. correspondent students, University of Szeged	Mentor	Ms. Kovács has successfully obtained Biologist BSc. diploma
2011-2013	Orsolya Bakos	BSc. correspondent students, University of Szeged	Mentor	Ms. Bakos has successfully obtained Biologist MSc. diploma
2012 - 2013	Diana Martos	MSc. graduate students, University of Szeged	Mentor	Ms. Martos has successfully obtained Biologist MSc. Diploma, and now she is a PhD. Student Department of Neurology , University of Szeged
2012-2013	Krisztina Tkacsenkó	BSc. correspondent students, University of Szeged	Mentor	Ms. Tkacsenkó has successfully obtained Biologist BSc. diploma
2012-2013	Henriett Flér Horvátné	BSc. correspondent students, University of Szeged	Mentor	Ms.Flér has successfully obtained Biologist BSc. diploma

RESEARCH INTEREST:

Lymphocyte signal transduction. Signalization of galectin-1 induced apoptosis. Lyso-phosphatidylcholine induced signaling events on T cells.

Adult stem cell plasticity. Autologous reintegration of ex vivo treated bone marrow stem cell derivatives into the CNS. In vitro systems for stem cell reintegration. Adult explant slice cultures. Microglia activation in hippocampal tissue slice culture. Dithranol induced inflammation events . Autophagy in neurodegeneration

PROJECTS:

1, T cell signalization events

I studied the effect of different structural modification of galectin-1 to it's apoptosis induction capacity. I prepared cysteine-serine mutant forms of this lectin, purified them on lactosyl-agarose column, then I studied how these structural modifications change the biologic activity of galectin-1. I compared the apoptosis induction, cell surface binding of the different structural mutant galectin-1 form by flow cytometry and I also compared the carbohydrate binding capacity of the mutants with an ELISA

based methods. This galectin-based studies were done on different kind of immune cell lines.
I studied the effect of lysophasphatydil-choline on T cell signalization, measuring the dynamics of intracellular Ca2+ response by flow cytometry on Jurkat T cell line.

2, Neurodegeneration, neuroinflammation

I worked with an in vitro modell for neurodegeneration an adult rat hippocampal slice cultures. I studied the cellular degeneration with several type of immunhistochemichal methods. I tried to modell the effect of an oxidative drug, dithranol, on the nervous system both in vivo, on the trigeminal ganglia, and in vitro on primary embryonic neuronal cell culture. The centre of my neurodegeneration studies was the microglial cells, their activation, proliferation. I also have some experience with rat bone marrow stem cell integration to the hippocampal slice culture.
I prepared a wide spectrum screen for different autophagy marker expression in different neurodegenerative disorders (Alzheimer, Huntington) in human parafin embadded brain samples.
My new project focus on the role of galectin-1 expression in microglial cell function.

METHODS:

A, cell and tissue culture techniques (primary neuronal cell culture, immune cell lines, microglial cell culture, hippocampal slice preparation with tissue chopper)
B, recombinant protein purification from bacteria, basic molecular biology techniques (plasmid manipulation, bacterial transformation and protein expression in bacteria), ELISA, Western blot
C, flow cytometry techniques (apoptosis measurment, direct and indirect immuncitometry, intracellular Ca^{2+} concentration measurment)
D, transcardial pefusion technique, tissue slice preparation for immunhistochemistry on cryostate, immunhistochemistry techniques (fluorescence and DAB peroxidase labelling), microscope handling,
E, Computer skills: (Word, Excell, Power Point, Adobe Photoshop, Image J, Sigma Stat)

CURRENT SUPPORT

EFOP 3.6.1-16-2016-00008 European Union Grant

Role: coordinator

SCIENTOMETRY

Number of publications: **9**
Number of Q1 publications: **3**
Number of Q1 publications: **6**
Number of first and last authored publications: **3**
Number of Q1 first and last authored publications:**1**

Number of citations: **237** (Google Scholar), 237 Independent
Hirsch index: **8** (Google Scholar)
Cummulative impact factor: **24.893**

Publications - Peer-Reviewed/Refereed

1) The manuscript entitled " Tibor Kovács, Janka Szinyákovics, Viktor Billes, Gábor Murányi, Annamária Bjelik, **Ádám Légrádi**, Melinda Szabó, Sára Sándor, Enikő Kubinyi, Cecília Paracky, János Lőke, Balázs Gulyás,8, Jun Mulder, Károly Gulya, Zsófia Maglóczky & Tibor Vellai : EDTP/MTMR14 lipid phosphatases promote brain ageing by progressively downregulating autophagy during lifespan" were sended to *Autophagy* at 15 December 2019. (reference number: NN-BC66580)
2) **Legradi A**, Dulka K, Jancsó G, Gulya K: Orofacial skin inflammation increases the number of macrophages in the maxillary subregion of the rat trigeminal ganglion in a corticosteroid-reversible manner", has been accepted for publication in Cell and Tissue Research. Manuscript No: CTRE-D-19-00447R2 IF: **4,044**
3) Kovács T, Billes V, Komlós M, Hotzi B, Manzéger A, Tarnóci A, Papp D, Szikszai F, Szinyákovics J, Rácz Á, Noszál B, Veszelka S, Walter FR, Deli MA, Hackler L Jr, Alfoldi R, Huzian O, Puskas LG, Liliom H, Tárnok K, Schlett K, Borsy A, Welker E, Kovács AL, Pádár Z, Erdős A, **Legradi A**, Bjelik A, Gulya K, Gulyás B, Vellai T.The small molecule AUTEN-99 (autophagy enhancer-99) prevents the progression of neurodegenerative symptoms. Sci Rep. 2017 Feb 16;7:42014, IF: **5.228**
4) Billes V, Kovács T, Hotzi B, Manzéger A, Tagscherer K, Komlós M, Erdős A, Bjelik A, **Legradi A**, Gulya K, Gulyás B, Vellai T: AUTEN-67 (autophagy enhancer-67) hampers the progression of neurodegenerative symptoms in a *Drosophila* model of Huntington's disease. Submitted, Journal of Huntington's disease 2016 May 7;5 (2):133-47.
5) Szigeti C, Bencsik N, **Legradi A**, Simonka A. J., Kasa P., Gulya K.: Long-term effects of selective immunolesions of cholinergic neurons of the nucleus basalis magnocellularis on the ascending cholinergic pathways in the rat: a model for Alzheimer's disease. Brain Res Bull. 2013 May;94 9-16 , IF: **2.818**
6) **Legradi A**, Varszegi S, Szigeti C, Gulya K: Adult rat hippocampal slices as in vitro models for neurodegeneration: Studies on cell viability and apoptotic processes.Brain Res Bull. 2011 Jan 15;84(1):39-44, IF: **2.184**
7) Gulyas B, Brockschnieder D, Nag S, Pavlova E, Kasa P, Beliczai Z, **Legradi A**, Gulya K, Thiele A, Dyrks T, Halldin C (2010) The norepinephrine transporter (NET) radioligand (S,S)-[18F]FMeNER-D2 shows significant decreases in NET density in the human brain in Alzheimer's disease: a post-mortem autoradiographic study. Neurochem Int. 2010 May-Jun; 56(6-7):789-98, IF**: 3.228**
8) Kiss J, Kunstar A, Fajka-Boja R, Dudics V, Tovari J, **Legradi A**, Monostori E, Uher F: A novel anti-inflammatory function of human galectin-1: inhibition of hematopoietic progenitor cell mobilization. Exp Hematol. 2007 Feb;35(2):305-13, IF:**3.408**
9) **Legradi A**, Chitu V, Szukacsov V, Fajka-Boja R, Szekely Szucs K, Monostori E.: Lysophosphatidylcholine is a regulator of tyrosine kinase activity and intracellular Ca(2+) level in Jurkat T cell line., Immunol Lett. 2004 Jan 30;91(1):17-21, IF**:2.136**
10) Fajka-Boja R, Szemes M, Ion G, **Legradi A**, Caron M, Monostori E.: Receptor tyrosine phosphatase, CD45 binds galectin-1 but does not mediate

its apoptotic signal in T cell lines., Immunol Lett. 2002 Jun 3;82(1-2):149-54., 2002 , IF:**1.847**

Books

1) Kata D, Nacsa K, Légrádi Á, Dulka K, Gulya K: Állati sejtek és szövetek tenyésztése (Practice book for university students about cell culturing (2015))

Citable abstracts, international conference posters:

1) J. Kiss, A. Kunstár, R. Fajka-Boja, V. Dudics, J. Tóvári, Á. Légrádi, Ė. Monostori and F. Uher: Galectin-1 inhibits hematopoietic stem and progenitor cell mobilization, Blood Reviews 2007 (21) S88, IF: 5,756
2) E. Monostori, G. Ion, R. Fajka-Boja, A. Legradi: Human galectin-1 induces T cell apoptosis via ceramide mediated mitochondrial pathway, Tissue Antigens 64 (4): 423-424 Oct. 2004, IF: 1,990
3) Adam Legradi, Karoly Gulya: Dithranol and corticosteroid treatments of the orofacial skin oppositely affect monocyte/macrophage/microglia in the rat trigeminal ganglion, FENS forum, Barcelona, Spain, 14-18 July, 2012
4) Ádám Légrádi, Gábor János Szebeni, Mir Yaqub, Karolina Dulka, Noémi Lajkó, Melinda Szabó, Éva Monostori, Károly Gulya: Galectin-1- expression correlates with the microglial activation state in primary and secondary cultures of newborn rat cortical tissues, FENS Virtual Forum, 11-15 July, 2020

Citable abstract in Hungarian local conferences

1) Légrádi Ádám, Demydenko Dmytro, Ion Gabriela, Frankó András, Monostori Éva: A galektin-1 fehérje – immunmoduláló humán lektin –1 struktúra-funkció vizsgálata, Magyar Immunológiai Társaság 33. Vándorgyűlése, Győr, 2003. október 15-17.
2) Ion Gabriela, Fajka-Boja Roberta, Légrádi Ádám, Monostori Éva: A galektin-1 mitochondriális úton indukál apoptózist a Jurkat-T-sejtekben, A Magyar Immunológiai Társaság 33. Vándorgyűlése, Győr, 2003. október 15-17.
3) Gabriela Ion, Ádám Légrádi, Roberta Fajka-Boja, Michel Caron, Dmytro Demydenko, Éva Monostori: Biological effect of galectin-1 on different cell lines of bone marrow origin, A Magyar Immunológiai Társaság XXXII. Kongresszusa, Kaposvár, 2002. szeptember 30-október 2.
4) Monostori Éva, Fajka-Boja Roberta, Gabriela Ion, Légrádi Ádám, Michel Cáron, Dmytro Demydenko: Galektin-1, egy gyulladáscsökkentő endogén lektin apoptótikus hatásának molekuláris mechanizmusa, Kaposvár, Magyar Immunológiai Társaság 32. Kongresszusa 2002. szeptember 30-október 2.
5) R. Fajka-Boja, M. Szemes, Á. Légrádi, G. Ion, M. Caron, É. Monostori: Galectin-1 binds to and internalizes in T leukemia cells, 11th Symposium on Signals and Signal Processing in the Immune System, Pécs, 2-6 September, 2001.
6) Légrádi Ádám, Várszegi Szilvia, Szigeti Csaba, Gulya Károly Sejtpusztulás vizsgálata felnőtt hippocampális szövetszeletekben, A Magyar Élettani Társaság (MÉT) LXXIV. Vándorgyűlése és a Magyar Kísérletes és Klinikai Farmakológiai Társaság (MFT) második közös tudományos konferenciája. Szeged, 2010. június 16-18.
7) Szigeti Csaba, Légrádi Ádám, Simonka János Aurél, Kása Péter, Gulya Károly: Csontvelői eredetű őssejtszármazékok reintegrációjánal vizsgálata nucleus basalis magnocellularis specifikus kolinerg lézióját követően, A Magyar Élettani Társaság (MÉT) LXXIV. Vándorgyűlése és a Magyar

Kísérletes és Klinikai Farmakológiai Társaság (MFT) második közös tudományos konferenciája. Szeged, 2010. június 16-18.

PROFESSIONAL SERVICE

Ad-Hoc Reviewer:

Journal of Psychosomatic Research