

# Tamar Barbakadze

## Personal information

## Contact Details

Email address:

Full name: Tamar Barbakadze

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Gender: Female

Country: საქართველო (Georgia)

Citizenship: საქართველო  
(Georgia)

City: Tbilisi

## Languages

Language	Writing	Reading	Speaking
English	C2	C2	C1
Russian	C2	C2	C2

## Education

### Academic degree

Academic Degree: Doctoral/PhD, Ed.D or other equivalent

Year obtained: 01.07.2005

### Education

Academic Degree	Name of the Institution	Country	Major discipline	Start year	End year
Doctoral/PhD, Ed.D or other equivalent	Institute of Physiology		Biochemistry	2001	2004
Master/MS, MA, MR, MBA, m.Ed or other equivalent	Tbilisi State University		Molecular Biology	1999	2001
Bachelor/BS, BA, BE or other equivalent	Tbilisi State University		Biology	1995	1999

### Trainings / Seminars / Training courses

Training / Seminar / The theme of the course	Organization name	Start year	End year
Essential Skills in Medical Education	AMEE-ESME (An International Association for Healthcare Professions Education).	2023	2023
Essential skills in Medical Education Assessment	AMEE-ESME (An International Association for Healthcare Professions Education).	2023	2023
Research Essential Skills in Medical Education (RESME)	AMEE-ESME (An International Association for Healthcare Professions Education).	2023	2024
Preventing Exploitation of Dual-Use Expertise and Tacit Knowledge in Central/Eastern Europe and the Baltics course	THE UNIVERSITY OF TENNESSEE	2021	2021
Ethics Teachers Training Course (ETTC)	UNESCO	2019	
Workshop on Molecular Life Sciences Education	FEBS	2019	
Innovation management and modern technological tendencies	IliaState University Technology Commercialization Office	2016	
Drug Quality Fundamentals: QC of Small Molecule Drugs and Recombinant Biologics	HPLC 2014	2014	
Georgia English for Specific Purposes (ESP)	CRDF-Global	2013	
Workshop on Authorship of Peer-Reviewed Publications and International Conference Participation	CRDF Global	2012	
"Basics in Neurobiology" dedicated to the Patch-Clamp technics	NeuroCure	2011	

Training / Seminar / The theme of the course	Organization name	Start year	End year
IBRO Neuroscience Course	IBRO (International Brain Research Organization), VLTP (Visiting Lecture Team Program)	2008	
Advanced Technologies in Brain Functions and Dysfunctions	Research Directorate General Marie Curie Conferences and Training Course supported by European Commission	2006	

## Projects

### Completed projects

Project title	Position	Project head	Start Date	End Date	Donor
Depression, gut microbiota and sigma-1 receptor.	key personal	Elene Zhuravliova	15.03.2020	01.01.2024	Shota Rustaveli national scientific foundation (FR-19-3114)
The participation of citrullinated proteins in methyl cycle activity and neuroinflammatory disorders.	Key personal	Lali Shanshiashvili	20.12.2017	25.03.2022	SHOTA RUSTAVELI NATIONAL SCIENCE FOUNDATION (FR17-534)
The action of thyroid hormones and flavonoids on the redistribution of regulatory proteins to the mitochondria and endoplasmic reticulum in Jurkat lymphoid cells	Key personal	Tamar Barbakadze	01.01.2010	31.12.2010	World Laboratory Grant (WFS), Geneva,
Analysis of macromolecular complex associated with chloride ion channel.	Key personal	David Mikeladze	01.01.2010	01.01.2011	USTC Research Grant # 5048
Nongenomic action of thyroid hormones	researcher	David Mikeladze	01.01.2009	01.01.2011	Georgian National Science Foundation (GNSF)
Ras-induced homocystein derived neurological disorders and their correction by flavonoids.	researcher	David Mikeladze	01.01.2008	31.12.2008	World Laboratory Grant (WFS), Geneva,
Neuroprotective effects of creatine	Key personal	David Mikeladze	01.01.2001	31.12.2002	CRDF grant, no: GB2-2011/6952
Ras participation in neurological disease.	Key personal	David Mikeladze	01.01.2001	31.12.2005	INTAS grant, ref no: 2001-0666

## Scientific Fields (2018-2020)

### Main Field

Field: 1. Natural sciences

Sub-Field: 1.6 Biological sciences

Subject area: 1.6.3 Biochemistry and molecular biology

### Additional Field (1)

Field: 3. Medical and health sciences

Sub-Field: 3.1 Basic medicine

Subject area: 3.1.4 Neurosciences (including psychophysiology)

## Scientific Fields (2021-2024)

### Main Field

Field: 2. Life Sciences

Sub-Field: 2.1 Molecular Biology, Biochemistry, Biophysics, Structural Biology

Subject area: 2.1.2 Biochemistry

### Additional Field (1)

Field: 2. Life Sciences

Sub-Field: 2.1 Molecular Biology, Biochemistry, Biophysics, Structural Biology

Subject area: 2.1.9 Molecular mechanisms of signalling processes

### Additional Field (2)

Field: 2. Life Sciences

Sub-Field: 2.5 Neuroscience and Disorders of the Nervous System

Subject area: 2.5.13 Nervous system injuries and trauma, stroke

## Employment History

### Current place(s) of employment

Workplace	Name of the work department	Position	Main responsibilities	Start Date
Ilia State University	Quality Assurance Office of Faculty of Natural Sciences and Medicine	Head of Quality Assurance Office	Coordination and monitoring of development, promotion and implementation of educational programs	27.09.2022
I.Beritashvili Center of Experimental Biomedicine	Laboratory of Biochemistry	senior researcher	research	01.03.2019
Ilia State University	Faculty of natural sciences and medicine	Associate professor	2011-2021 - Master Program of Biopharmacy (; 2015- today - Master Program of Food science, 2021- today - Master Program of Applied Biochemistry and Biotechnology - Scientific research and Educational courses: 1. Bioenergetics 2. Drug metabolism and pharmacokinetics 3. Molecular endocrinology and molecular mechanisms of adaptation 4. Pharmacogenomics, toxicogenomics and molecular bases of drug resistance 5. Nutrition Physiology 6. Food additives 7. Chemical and microbiological analysis of food products 8. Molecules of life and the life of molecules 9. Mitochondrial dysfunctions 10. Medical biology	05.03.2013

### Work experience

Company/Institution	Name of the department	Position	Main responsibilities	Start Date	End Date
Ilia State University	School of natural sciences and engineering	Assistant professor	Educational courses and scientific research	05.03.2009	05.03.2013
I.Beritashvili Center of Experimental Biomedicine	Department of Biochemistry	senior researcher	research	01.01.2006	01.03.2019

## Scientific Productivity

Type	Authors	Publication title	Source title	Year
Article	Tamar Barbakadze, Elisabed Kvergelidze, David Mikeladze	T3 thyroid hormone regulates the actin cytoskeleton dynamics during hypoxia through avb3 integrin in differentiated PC-12 cell	“Cell Journal (Yakhteh)“	2023
Article	Gigi Tevzadze, Natalia Kiknadze, Elene Zhuravliova, Tamar Barbakadze, Lali Shanshiashvili, Nana Narmania, David Mikeladze	Reducing the amount of Clostridium difficile in the gut microbiome reduces the behavioral projection of cognitive activity in rats	World Academy of Sciences Journal	2023
Article	Gigi Tevzadze, Elene Zhuravliova, Natia Okriashvili, Nana Narmania, Tamar Barbakadze, David Mikeladze	Different Arrangement of Dopamine Receptors/NMDA Receptors Heterocomplexes in the Brain Regions of a Healthy Male, Female and Audiogenic Seizure-Prone Male Rats	American Journal of Biochemistry and Biotechnology	2022
Article	Gigi Tevzadze, Tamar Barbakadze, Elisabed Kvergelidze, Elene Zhuravliova, Lali Shanshiashvili, David Mikeladze	Gut neurotoxin p-cresol induces brain-derived neurotrophic factor secretion and increases the expression of neurofilament subunits in PC-12 cells	AIMS Neuroscience	2022
Article	Gigi Tevzadze, Elene Zhuravliova, Tamar Barbakadze, Lali Shanshiashvili, Davit Dzneladze, Zaqaria Nanobashvili, Tamar Lordkipanidze, David Mikeladze	Gut neurotoxin p-cresol induces differential expression of GLUN2B and GLUN2A subunits of the NMDA receptor in the hippocampus and nucleus accumbens in healthy and audiogenic seizure-prone rats	AIMS Neuroscience	2020
Article	Galina Goloshvili, Tamar Barbakadze, David Mikeladze	Sodium nitroprusside induces H-Ras depalmitoylation and alters the cellular response to hypoxia in differentiated and undifferentiated PC12 cells.	Cell Biochemistry and Function	2019
Article	Barbakadze T, Goloshvili G, Narmania N, Zhuravliova E, Mikeladze D	Subcellular Distribution of S-Nitrosylated H-Ras in Differentiated and Undifferentiated PC12 Cells during Hypoxia	Cell J	2017
Article	Koriauli S, Natsvlshvili N, Barbakadze T, Mikeladze D	Knockdown of interleukin-10 induces the redistribution of sigma1-receptor and increases the glutamate-dependent NADPH-oxidase activity in mouse brain neurons	Biol Res.	2015
Article	Koriauli, Sopiko; Barbakadze, Tamar; Natsvlshvili, Nino; Dabrundashvili, Nino; Kvaratskhelia, Eka; Mikeladze, David;	IL-10 gene knockout reduces the expression of mGlu receptor 1a/b and decreases the glutamate-dependent production of nitric oxide.	Journal of Biomedical Science and Engineering	2014
Article	Barbakadze T, Natsvlshvili N, Mikeladze D.	Thyroid hormones differentially regulate phosphorylation of ERK and Akt via integrin $\alpha\beta3$ receptor in undifferentiated and differentiated PC-12 cells.	Cell Biochem Funct	2013
Article	Zhuravliova E, Barbakadze T, Jojua N, Zaalishvili E, Shanshiashvili L, Natsvlshvili N, Kalandadze I, Narmania N, Chogovadze I, Mikeladze D	Synaptic and non-synaptic mitochondria in hippocampus of adult rats differ in their sensitivity to hypothyroidism.	Cell Mol Neurobiol.	2012
Article	Bátor J, Varga J, Berta G, Barbakadze T, Mikeladze D, Ramsden J, Szeberényi J.	Sodium nitroprusside, a nitric oxide donor, fails to bypass the block of neuronal differentiation in PC12 cells imposed by a dominant negative Ras protein.	Cell Mol Biol	2012
Article	Shanshiashvili LV, Dabrundashvili N, Natsvlshvili N, Kvaratskhelia E, Zhuravliova E, Barbakadze T, Koriauli S, Maisuradze E, Topuria T, Mikeladze DG.	mGluR1 interacts with cystic fibrosis transmembrane conductance regulator and modulates the secretion of IL-10 in cystic fibrosis peripheral lymphocytes.	Mol Immunol.	2012
Article	Barbakadze T, Natsvlshvili N, Mikeladze D.	Action of thyroid hormones and fisetin on the activation of ERK and Akt protein kinases in PC-12 cells.	JBPC- Journal of Biological Physics and Chemistry	2012
Article	Natsvlshvili N., Barbakadze T, Mikeladze D.	Integrin thyroid hormone receptor and fisetin regulate the nuclear translocation of FoxO6 transcription factor and c-Rel in PC-12 cells.	JBPC- Journal of Biological Physics and Chemistry	2012
Article	Shanshiashvili L, Narmania N, Barbakadze T, Zhuravliova E, Natsvlshvili N, Ramsden J, Mikeladze DG	S-nitrosylation decreases the adsorption of H-Ras in lipid bilayer and changes intrinsic catalytic activity.	Cell Biochem Biophys.	2011
Article	Zhuravliova E, Barbakadze T, Zaalishvili E, Chipashvili M, Koshoridze N, Mikeladze D.	Social isolation in rats inhibits oxidative metabolism, decreases the content of mitochondrial K-Ras and activates mitochondrial hexokinase.	Behav Brain Res	2009

Type	Authors	Publication title	Source title	Year
Article	Zhuravliova E, Barbakadze T, Narmania N, Sepashvili M, Mikeladze DG.	Hypoinsulinemia alleviates the GRF1/Ras/Akt anti-apoptotic pathway and induces alterations of mitochondrial ras trafficking in neuronal cells.	Neurochem Res.	2009
Article	Mikeladze D, Zhuravliova E, Barbakadze T	Ras proteins, nitrosylation and homocysteine metabolism.	Georgian Med News.	2008
Article	Zhuravliova E, Barbakadze T, Natsvlshvili N, Mikeladze DG.	Haloperidol induces neurotoxicity by the NMDA receptor downstream signaling pathway, alternative from glutamate excitotoxicity	Neurochem Int.	2007
Article	Zhuravliova E, Barbakadze T, Narmania N, Ramsden J, Mikeladze D.	Inhibition of nitric oxide synthase and farnesyltransferase change the activities of several transcription factors.	J Mol Neurosci	2007
Article	Narmania N., Zhuravliova E., Barbakadze T., Khundadze M., Mikeladze D.	Double modifications of Ras protein change the DNA-binding activities of transcription factors.	Proceedings of Georgian Academy of Sciences, Biological Series_A	2006
Article	Sepashvili M., Zhuravliova E., Barbakadze T., Khundadze M. and Mikeladze D.	Oncogenic H-Ras enhances production of S-adenosylhomocysteine and reduces the level of S-adenosylmethionine in PC12 cells.	Proc. Georgian Acad. Sci., Biol. Ser. A	2006
Article	Sepashvili M, Zhuravliova E, Barbakadze T, Khundadze M, Narmania N, Mikeladze DG.	L-NAME has opposite effects on the productions of S-adenosylhomocysteine and S-adenosylmethionine in V12-H-Ras and M-CR3B-Ras pheochromocytoma cells.	Neurochem Res.	2006
Article	Sepashvili M.,Zaalishvili E., Zhuravliova E., Barbakadze T., Mikeladze D.	Modification of Ras alter content of secreted homocysteine by PC12 cells.	Proc. Georgian Acad. Sci., Biol. Ser. A,	2005
Article	Narmania N., Zhuravliova E., Barbakadze T. and Mikeladze D.	Farnesylation and nitrosylation of p21Ras change its intrinsic GTPase activity.	JBPC- Journal of Biological Physics and Chemistry	2005
Article	Juravleva E, Barbakadze T, Mikeladze D, Kekelidze T.	Creatine enhances survival of glutamate-treated neuronal/glia cells, modulates Ras/NF-kappaB signaling, and increases the generation of reactive oxygen species.	J Neurosci	2005
Article	Barbakadze T, Zhuravliova E, Sepashvili M, Zaalishvili E, Ramsden JJ, Bátor J, Szeberényi J, Mikeladze D.	Production of homocysteine in serum-starved apoptotic PC12 cells depends on the activation and modification of Ras.	Neurosci Lett.	2005
Article	Barbakadze T., Zhuravliova E., Narmania N., Sanikidze T., Kekelidze T., Mikeladze D.	Effects of guanidine analogs of creatine on the formation of reactive oxygen species and viability of primary neuronal/glia cells.	JBPC- Journal of Biological Physics and Chemistry	2004
Article	Barbakadze T., Zhuravliova E., Kharebava G., Chatirishvili N., Dabrundashvili N., Mikeladze D.	Placental peptide p6 reduce glutamate-dependent neurotoxicity.	Proceedings of Georgian Academy of Sciences, Biological Series_A,30,1	2004
Chapter in book	Juravleva E, Barbakadze T, Natsvlshvili N, Kekelidze T, Mikeladze D	Creatine prevents the cyroroxocity of haloperidol by alteration of NO/Ras/NF-kB system.	Creatine kinase and Brain Energy Metabolism. T Kekelidze and D. Holzman. IOS Press	2003

### Scholarships and awards

Scholarships/awards name	Issuer	Year of Issue
For the best scientist and group of scientists for their contribution to the development of natural sciences	SHOTA RUSTAVELI NATIONAL SCIENCE FOUNDATION OF GEORGIA	2017
travel grant	GRDF	2014
travel grant	SHOTA RUSTAVELI NATIONAL SCIENCE FOUNDATION OF GEORGIA	2012
travel grant	FENS	2012
travel grant	YSF (FEBS)	2010
travel grant	SHOTA RUSTAVELI NATIONAL SCIENCE FOUNDATION OF GEORGIA	2010
I.Beritashvili Young scientists Stipend	GNSF	2008
one-year scholarship	World Federation of Scientists	2007
travel grant	FENS	2006

Scholarships/awards name	Issuer	Year of Issue
II place Diploma and Grant at students' Conference	ISSEP (International Soros Society Education Program)	2003
II place Diploma and Grant at students' Conference	ISSEP (International Soros Society Education Program)	2002
II place Diploma and Grant at students' Conference	ISSEP (International Soros Society Education Program)	2001
I place Diploma and Grant at students' Conference	ISSEP (International Soros Society Education Program)	2000
Stipend for students	ISSEP (International Soros Society Education Program)	1999
Stipend for students	ISSEP (International Soros Society Education Program)	1998
Stipend for students	ISSEP (International Soros Society Education Program)	1997
Stipend for students	ISSEP (International Soros Society Education Program)	1995

### Participation in scientific events

Scientific event name	Title of the presentation	Event venue	Year
3rd European Symposium on Physiopathology of Sigma-1 Receptors	p-Cresol induced cytotoxicity and protection by sigma ligands	Bari, Italy	2021
XIV European Meeting on Glial Cells in Health and Disease	The action of myelin basic protein charge isomers on methyl cycle in microglia	Porto, Portugal	2019
"Brain & neuroplasticity: structural and molecular aspects"	H-Ras nitrosylation alters cellular response to hypoxia in differentiated/undifferentiated PC12 cells.	Tbilisi, Georgia	2019
International Conference the 1st "Beritashvili Talks", Neurophysiological Functions and their Disorders – Interdisciplinary Studies	S-Nitrosylation of H-Ras in Differentiated and Undifferentiated PC12 Cells during Hypoxia	Tbilisi, Georgia	2018
41st Federation of European Biochemical Societies (FEBS) congress	Knockdown of interleukin-10 induces the redistribution of sigma 1-receptor and increases the glutamate-dependent NADPHoxidase activity in mouse brain neurons	Ephesus / Kuşadası, Turkey	2016
41 st International Symposium on High Performance Liquid Phase Separations and Related Techniques 2014	Simultaneous Determination of Polyamine Derivatives by RP-HPLC in Mouse Brain and its Application in quantitative Analysis of Spermine in IL-10 Gene Knockout and Wt Mice Brain	New Orleans, Louisiana, USA	2014
FEBS/EMBO 2014	IL-10 gene knockout decreases the synthesis of spermine, changes the expression of mGlu receptor 1a/b, and reduces the glutamate-dependent production of nitric oxide in synaptoneuroosomes.	Paris, France.	2014
III International Symposium. Neuroplasticity: Nervous substrate for health and disease. New approaches for research.	IL-10 gene knockout reduces the expression of mGlu1A/B and decreases the glutamate-dependent production of NO.	Tbilisi, Georgia	2014
The 6th European Conference on Rare Diseases & Orphan Products (ECRD)	Metabotropic glutamate receptor subtype 1 interacts with cystic fibrosis transmembrane conductance regulator and changes the secretion of IL-10 in lymphocytes	Brussels, Belgium	2012
8th FENS (Federation of European Neuroscience Societies)	Activation of ERK and Akt protein kinases in PC12 cells by thyroid hormones	Barcelona, Spain	2012
ISTC II International Scientific Workshop "Neuroplasticity: Nervous Substrate for Health and Disease"	Action of thyroid hormones and fisetin on the activation of ERK and Akt protein kinases in PC12 cells	Tbilisi, Georgia	2012
35 th FEBS Congress Molecules Of Life	Nobiletin, a citrus flavonoid, improves impairment in nonsynaptic mitochondria during hypothyroid conditions.	Gothenburg, Sweden	2010
Young Scientist Forum	Nobiletin, a citrus flavonoid, improves impairment in nonsynaptic mitochondria during hypothyroid conditions.	Gothenburg, Sweden	2010
5th Forum of European Neuroscience	Farnesylation and nitrosylation change the intrinsic GTP-ase activity of p21Ras	Vienna, Austria	2006

Scientific event name	Title of the presentation	Event venue	Year
4th Forum of European Neuroscience	Simultaneous action of farnesyltransferase and nitric oxide synthase can change the direction of Ras-dependent down-stream pathways.	Lisbon, Portugal	2004
Twelfth Symposium on Cell and Developmental Biology	Farnesyltransferase and nitric oxide synthase inhibitors change the activities of c-jun and other transcription factors	Pecs , Hungary	2004
Sixth International Meeting for Brain Energy Metabolism	NO-synthase contributes to the neuroprotective effect of creatine	Heraclion, Crete, Greece	2004
NATO Advanced Research Workshop.Creatine Kinase and Brain Energy Metabolism: Function and Disease	nNOS and p21RAS in supermolecular complex of NMDA receptor are regulated by different ways	Tbilisi, Georgia	2001
2nd Convention of Physiologists	Prevention of NMDA-receptor induced apoptosis by Placental Factor P6.	Tbilisi, Georgia	2000

### Productivity index

#	Citation index	h-index
Google scholar	272.00	9.00
Scopus	162.00	7.00
Web of science	133.00	7.00