Anait Veller Vassilian

48-78
anaitvassilian@ysu.am

Research Institute of Biology
Group for Biochemical Conversion of Organic Waste and Microbiological Production
Senior Researcher

Faculty of Biology
Research Institute of Biology
Group for Biochemical Conversion of Organic Waste and Microbiological Production
Senior Researcher

Faculty of Biology
Chair of Ecology and Nature Conservation
Associate professor

Education

Institution	Yerevan State University
Faculty	Biology
Date	1979 - 1984
Degree name	Qualified specialist

Scientific Rank/degree

Institution	Yerevan State University
Date	2005
Degree name	Associate professor

Institution	Yerevan State University
Date	1993
Degree name	Candidate
Scientific Supervisor	Prof, Armen Trchounian
Research Topic	ATPase activity of membranes of unc and trk mutants of anaerobically grown Escherhichia coli

Language skills

Русский English

Work experience

Institution	Yerevan State University

Period of time	2005 till now
Rank/degree	Associate Professor at the Department of Ecology and Nature Protection

Institution	Yerevan State University
Period of time	2000 - 2005
Rank/degree	Assistant Professor at the Department of Ecology and Nature Protection

Institution	The University of Chicago IL, USA
Period of time	1998 till now
Rank/degree	Researcher at the Department of Molecular Genetics and Cell Biology /MGCB/ University of Chicago, IL USA /Prof. M. Fonstein/ IHFSPO UNESCO

Institution	The University of Chicago IL, USA
Period of time	1995 - 1996
Rank/degree	Researcher at the Department of Molecular Genetics and Cell Biology /MGCB/ University of Chicago, IL USA /Prof. B. Strauss/ IHFSPO UNESCO

Institution	The University of Chicago IL, USA
Period of time	1991 - 1992
Rank/degree	Researcher at the Department of Molecular Genetics and Cell Biology /MGCB/ University of Chicago, IL USA /Prof. B. Straussy Intenational Human Frontier Science Program

Institution	Yerevan State University
Period of time	1988 - 2000
Rank/degree	Senior laboratory assistant at the Department of Plants Physiology and Anatomy

Institution	Yerevan State University
Period of time	1984 - 1988
Rank/degree	Laboratory assistant at the Department of Plants Physiology and Anatomy

Participation in international conferences and seminars

01/11/1991 - 01/09/1992	Researcher at the Department of Molecular Genetics and Cell Biology, Prof. B. Strauss University of Chicago United States of America (the)
01/12/1995 - 01/03/1996	International Human Frontier Science Program Fellowship, UNESCO University of Chicago United States of America (the)

01/09/1998 - 01/12/1998	International Human Frontier Science Program Fellowship, UNESCO University of Chicago United States of America (the)
13/06/2016 - 16/06/2016	21st WHEC Congress in Zaragoza, Spain Spain
30/06/2022 - 02/07/2022	2nd FEMS Conference on Microbiology, Belgrade, Serbia Serbia
09/07/2023 - 13/07/2023	FEMS2023 Congress in Hamburg, Germany Germany

Publications

Article

FhlA-mediated regulation of proton transport and energy transduction in Escherichia coli at acidic pH

Heghine Gevorgyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

PLOS ONE 2026 e0351220

https://doi.org/10.1371/journal.pone.0351220

Article

Biotechnological potential of spent coffee grounds for biohydrogen production by Escherichia coli

Liana Vanyan, Hayarpi Aghekyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

International Journal of Hydrogen Energy 2025 1121-1131

Article

Role of the FhlA transcriptional activator in metabolic changes in Escherichia coli during fermentation of mixed carbon sources at acidic pH

Heghine Gevorgyan, Marine Parsadanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

Biochimie 2025 1-9

Article

Microbial Valorization of Sunflower Husk for Sustainable Biohydrogen and Biomass Production

LIana Vanyan, Akerke Toleugazykyzy, Kaisar Yegizbay, Ayaulym Daniyarova, Lyudmila Zuloyan,

Gayane Mikoyan, Anait Vassilian, Anna Poladyan, Kairat Bekbayev, Karen Trchounian

Energies 2025 3885

Article

Escherichia coli FocA/B-dependent H+ and K+ fluxes: Influence of exogenous versus endogenous formate

Lilit Grigoryan, Anush Babayan, Anait Vassilian, Anna Poladyan, Gary Sawers, Karen Trchounian

Biophysical Reports 2025 100225

Article

Biomass and bioethanol production from pretreated mixed fruit peel hydrolysate using Saccharomyces cerevisiae strains at different pH and oxygen conditions
Anahit Shirvanyan, Ayaulym Daniyarova, Anait Vassilian, Anna Poladyan, Gopalakrishnan Kumar,

Duman Orynbekov, Kairat Bekbayev, Karen Trchounian

BMC Biotechnology 2025 136

Conference

Bioconversion of fruit waste into bioethanol and single-cell protein using Saccharomyces cerevisiae strains
Anahit Shirvanyan, Ayaulym Daniyarova, Anait Vassilian, Anna Poladyan, Kumar Gopalakrishnan,

Duman Orynbekov, Kairat Bekbayev, Karen Trchounian

2025 112-113

https://ybc.bio/

Article

Gold nanoparticles activate hydrogenase synthesis and improve heterotrophic growth of Ralstonia eutropha H16
Tatevik Manutsyan, Syuzanna Blbulyan, Anait Vassilian, Tatiana Semashko, Gayane Kirakosyan,

Lilit Gabrielyan, Karen Trchounian, Anna Poladyan

FEMS Microbiology Letters 2024 1-8

Article

Growth and hydrogen production by Escherichia coli during utilization of sole and mixture of sugar beet, alcohol, and beer production waste
Kairat Bekbayev, Satenik Mirzoyan, Akerke Toleugazykyzy, Dinara Tlevlessova, Anait Vassilian,

Anna Poladyan, Karen Trchounian

Biomass Conversion and Biorefinery 2024 909-919

Article

Role of the Escherichia coli FocA and FocB formate channels in controlling proton/potassium fluxes and hydrogen production during osmotic stress in energy-limited, stationary phase fermenting cells
Anush Babayan, Anait Vassilian, Anna Poladyan, Karen Trchounan

Biochimie 2024 91-98

Article

Proton conductance and regulation of proton/potassium fluxes in Escherichia coli FhlA-lacking cells during fermentation of mixed carbon sources
Heghine Gevorgyan, Anna Poladyan, Karen Trchounian, Anait Vassilian

Archives of Biochemistry and Biophysics 2024 109999

Conference

The role of the Escherichia coli FocA and FocB formate channels in proton flux during fermentation of mixed carbon sources
Anush Babayan, Anait Vassilian, Anna Poladyan, Karen Trchounian

2024 81 - 81

https://www.ebec2024.org/

Article

L-amino acids affect the hydrogenase activity and growth of Ralstonia eutropha H16

Meri Iskandaryan, Syuzanna Blbulyan, Mayramik Sahakyan, Anait Vassilian, Karen Trchounian,

Anna Poladyan

AMB Express 2023 33

Article

Osmotic stress as a factor for regulating E. coli hydrogenase activity and enhancing H2 production during mixed carbon sources fermentation

Anush Babayan, Anahit Vassilian, Karen Trchounian

AIMS Microbiology 2023 724-737

Conference

Characteristic effects of gold nanoparticles on growth and H2 metabolism of Ralstonia eutropha H16 and Escherichia coli

Anna Poladyan, Tatev Manutsyan, Meri Iskandaryan, Syuzanna Blbulyan, Anait Vassilian,

Tatiana Semashko

2023 358 - 358

https://www.fems2023.org/

Conference

A NOVEL COST-EFFECTIVE APPROACH FOR PRODUCTION OF HYDROGENASE ENZYMES AND MOLECULAR HYDROGEN FROM WHEY-BASED BY-PRODUCTS

Anna Poladyan, Meri Iskandaryan, Ofelya Karapetyan, Ela Minasyan, Anait Vassilian, Karen Trchounian,

Garabed Anatranikian

2023 40-45

https://www.hbku.edu.qa/en/ICH2P23

Conference

BIOTECHNOLOGICAL POTENTIAL OF SPENT COFFEE GROUNDS FOR LARGE-SCALE HYDROGEN PRODUCTION

Liana Vanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

2023 79 - 84

https://www.hbku.edu.qa/en/ICH2P23

Conference

ՕՐԳԱՆԱԿԱՆ ԹԱՓՈՆՆԵՐԻՑ ԿԵՆՍԱԶԱՆԳՎԱԾԻ ԵՎ ԿԵՆՍԱԷՆԵՐԳԻԱՅԻ ՓՈԽԱԿԵՐՊՄԱՆ ԿԵՆՍԱՔԻՄԻԱԿԱՆ ՈՒՂԻՆԵՐԻ ԲՆՈՒԹԱԳՐՈՒՄԸ ԵՎ ՕՔՍԻԴԱՎԵՐԱԿԱՆԳՈՂԱԿԱՆ ԿԱՐԳԱՎՈՐՈՒՄԸ

Փոլադյան Ա.Ա., Գևորգյան Հ.Խ., Վանյան Լ.Մ., Բաբայան Ա.Ռ., Բաղդասարյան Լ.Հ., Վասիլյան Ա.Վ.,

Պետրոսյան Հ.Հ.

2023 91-92

https://www.ysu.am/conference/770/53120

Conference

Influence of acidic pH on the interaction between proton ATPase and enzymes responsible for molecular hydrogen generation

Karen Trchounian, Heghine Gevorgyan, Lilit Baghdasaryan, Anait Vassilian, Anna Poladyan

2023 22 - 22

https://euromicroph.eu/

Conference

Formate-hydrogen lyase has a significant role in proton motive force generation in

Escherichia coli at acidic pH during mixed carbon fermentation
Heghine Gevorgyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

2023 105 - 105

https://www.efbiotechnology.org/microbialstress/

Conference

Understanding the Role of Escherichia coli Hydrogenase-2 subunits in proton flux under different glucose concentrations
Liana Vanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

2023 1127 - 1127

https://www.fems2023.org/

Article

The influence of hydrogen production on the formation of metabolic pathways and regulation of ΔpH in Escherichia coli
Heghine Gevorgyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

International Journal of Hydrogen Energy 2022 40264-40274

Article

Metabolic pathways and ΔpH regulation in Escherichia coli during the fermentation of glucose and glycerol in the presence of formate at pH 6.5: the role of FhlA transcriptional activator
Heghine Gevorgyan, Satenik Khalatyan, Anait Vassilian, Karen Trchounian

FEMS Microbiology Letters 2022 1-9

Article

Coffee silverskin as a substrate for biobased production of biomass and hydrogen by Escherichia coli
Satenik Mirzoyan, Hayarpi Aghekyan, Liana Vanyan, Anait Vassilian, Karen Trchounian

International Journal of Energy Research 2022 23110-23121

Conference

WINE GRAPE WASTE APPLICATION FOR ESCHERICHIA COLI BIOMASS AND H2 PRODUCTION
Syuzanna Blbulyan, Lusine Baghdasaryan, Satenik Mirzoyan, Anahit Vassilian, Tatiana Semashko,

Anna Poladyan
2022 423

https://www.femsbelgrade2022.org/

Conference

The contribution of proton ATPase in E. coli growth during mixed carbon sources fermentation at different pHs
Heghine Gevorgyan, Lilit Baghdasaryan, Anait Vassilian, Karen Trchounian

2022 723

https://www.femsbelgrade2022.org/

Conference

Role of E. coli potassium transporters in proton / potassium flux during mixed carbon fermentation at pH 7.5
Heghine Gevorgyan, Mariam Danielyan, Anait Vassilian, Karen Trchounian

2022 816

https://www.femsbelgrade2022.org/

Article

The role of Escherichia coli FhlA transcriptional activator in generation of proton motive force and FOF1-ATPase activity at pH 7.5

Heghine Gevorgyan, Satenik Khalatyan, Anait Vassilian, Karen Trchouian

IUBMB Life (International Union of Biochemistry and Molecular Biology Life) 2021 883-892

Article

Escherichia coli Dcu C4-dicarboxylate transporters dependent proton and potassium fluxes and FOF1-ATPase activity during glucose fermentation at pH 7.5

Lusine Karapetyan, Gayane Mikoyan, Anait Vassilian, Antonio Valle, Jorge Bolivar, Armen Trchounian,

Karen Trchounian

Bioelectrochemistry 2021 107867

Article

THE ROLE OF PROTON ATPASE SPECIFIC INHIBITOR N,N'-DICYCLOHEXYLCARBODIIMIDE AND EXTERNAL FORMATE CONCENTRATION ON E. COLIGROWTH DURING MIXED CARBON SOURCES FERMENTATION AT DIFFERENT PHs

Heghine Kh. Gevorgyan, Anait V. Vassilian, Karen A. Trchounian

Proceedings of the YSU B Chemical and Biological Sciences 2021 67-74

Conference

Proton/potassium Fluxes Depend on GlucoseConcentration in E. coli at pH 7.5

Liana Vanyan, Anait Vassilian, Karen Trchounian

2021 WMF 21-2026

https://www.worldmicrobeforum.org/

Conference

Is FHL Complex Responsible for SensingGlucose Concentration?

Liana Vanyan, Anait Vassilian, Karen Trchounian

2021 WMF 21-2003

https://www.worldmicrobeforum.org/

Conference

Optimization of Fruits Waste Pretreatment for E. coli Growth and H2 Production

S. Mirzoyan, A. Vassilian, A. Poladyan, K. Trchounian

2021 WMF 21-0437

https://www.worldmicrobeforum.org/

Article

External succinate and potassium ions influence Dcu dependent FOF1-ATPase activity and H+ flux of Escherichia coli at different pHs

G. Mikoyan, L. Karapetyan, A. Vassiian, A. Trchounian, K. Trchounian

Journal of Bioenergetics and Biomembranes 2020 377-382

Conference

Simultaneous Utilization of Glucose and Glycerol in the Presence of External Formate by E. coli at Slightly Alkaline Ph

Karen Trchounian, Armen Trchounian, Heghine Gevorgyan, Anait Vassilian

2020 MBP06

https://www.asm.org/Events/ASM-Microbe-Online/Home

Conference

The Role of Escherichia coli FOF1 -ATPase and Hydrogenases on Specific Growth Rate During Glucose Fermentation

Karen Trchounian, Hripmsime Petrosyan, Liana Vanyan, Armen Trchounian, Anait Vassilian

2020 MBP06

https://www.asm.org/Events/ASM-Microbe-Online/Home

Article

Hydrogen production by Escherichia coli using brewery waste: optimal pretreatment of waste and role of different hydrogenases

Anna Poladyan, Karen Trchounian, Anait Vassilian, Armen Trchounian

Renewable Energy 2018 931-936

http://www.journals.elsevier.com/renewable-energy

Article

Prolongation of H2 production during mixed carbon sources fermentation in E. coli batch cultures: New findings and role of different hydrogenases

Satenik Mirzoyan, Anait Vassilian, Armen Trchounian, Karen Trchounian

International Journal of Hydrogen Energy 2018 8739-8746

https://www.sciencedirect.com/journal/international-journal-of-hydrogen-energy/...

Conference

Effect of Hydrogenases on the F0F1-Atpase Activity in Escherichia coli During Fermentation of Glucose, Glycerol and Formate

H. Gevorkyan, A. Vassilian, G. Sawers, A. Trchounian, K. Trchounian

2018 SUNDAY-1081

https://www.asm.org/index.php/asm-microbe-2018

Conference

H2 production by Escherichia coli during utilization of lactose or mixture of lactose and glycerol: prolongation of production and role of hydrogenases 1 and 2 at different pH

Satenik Mirzoyan, Anait Vassilian, Armen Trchounian, Karen Trchounian

2018 P1: 11

https://www.whec2018.com

Conference

Relationship of dcu transport system and proton ATPase during glycerol fermentation

L. Karapetyan, A. Valle, J. Bolivar, A. Vassilian, A. Trchounian, K. Trchounian

2018 359-359

https://2018.febscongress.org/

Conference

Growth and Hydrogen Production Properties of Escherichia Coli During Fermentation of the Mixture of Glucose, Glycerol and Formate at Di

K.Trchounian, S. Mirzoyan, P. Romero-Pareja, M. Coello, A. Vassilian, A. Trchounian

2017 SATYRDAY-612-612

https://www.asm.org/index.php/asm-microbe-2017

Conference

COMPENSATORY H2 PRODUCING ACTIVITY OF ESCHERICHIA COLI HYDROGENASES DURING MIXED CARBON SOURCES FERMENTATION

K. Trchounian, S. Mirzoyan, A. Vassilian, A. Trchounian

2017 095-095

http://fems-microbiology2017.kenes.com/

Article

Կրթական ծրագրերում մանրէների բազմազանության և էկոլոգիայի հիմնահարցերի ընդգրկման անհրաժե'տության մասին

Ա.Վ. Վասիլյան, Հ.Հ. Փանոսյան, Ա.Հ. Թռչունյան

Բնագետ 2016 36-40

http://www.ysu.am/bnaget

Article

Hydrogen production by Escherichia coli during glucose fermentation: Effects of oxidative and reductive routes used by the strain lacking hydrogen oxidizing hydrogenases 1 (hya) and 2 (hyb)

Varduhi Abrahamyan, Anna Poladyan, Anait Vassilian, Armen Trchounian

International Journal of Hydrogen Energy 2015 7459-7464

http://www.journals.elsevier.com/international-journal-of-hydrogen-energy/

Article

Oxidative and Reductive Routes of Glycerol and Glucose Fermentation by Escherichia coli Batch Cultures and Their Regulation by Oxidizing and Reducing Reagents at Different pHs

Anna Poladyan, Anait Vassilian, Armen Trchounian, Arev Avagyan

Current Microbiology 2013 49-55

http://www.springer.com/life+sciences/microbiology/journal/284

Article

Multiple and reversible hydrogenases for hydrogen production by Escherichia coli: dependence on fermentation substrate, pH and the F0F1-ATPase

Karen Trchounian, Anna Poladyan, Anait Vassilian, Armen Trchounian

Critical Reviews in Biochemistry and Molecular Biology 2012 236-249

http://www.tandfonline.com/toc/ibmg20/current
