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Научно-исследовательский институт биологии

Օրգանական թափոնների կենսաքիմիական փոխակերպման և մանրէաբանական արտադրության խումբ

Старший научный сотрудник

Образование

Учреждение	ЕГУ
Факультет	Биологии
Дата	1979 - 1984
Степень / Звание	Квалифицированный специалист

Ученое звание/Ученая степень

Учреждение	ЕГУ
Дата	2005
Степень / Звание	Доцент
Специальность	Биологические науки

Учреждение	ЕГУ
Дата	1993
Степень / Звание	Кандидат наук
Специальность	Биологические науки
Научный руководитель	д.б.н, проф. Армен Трчунян
Научная тема	АТФазная активность в мембранах unc и trk мутантов анаэробно выращенных Escherichia coli

Знание языков

Русский English

Опыт работы

Учреждение	ЕГУ
Период времени	2005 до настоящего времени
Звание/степень	Доцент кафедры экологии и защиты природы

Учреждение	ЕГУ
Период времени	2000 - 2005

Звание/степень	Ассистент кафедры экологии и защиты природы
Учреждение	University of Chicago, IL USA
Период времени	1998 - 1998
Звание/степень	Научный сотрудник Department of Molecular Genetics and Cell Biology /MGCB/ University of Chicago, IL USA / Prof. M. Fonstein / IHFSPO UNESCO
Учреждение	University of Chicago, IL USA
Период времени	1995 - 1996
Звание/степень	Научный сотрудник Department of Molecular Genetics and Cell Biology /MGCB/ University of Chicago, IL USA / Prof. B. Strauss / IHFSPO UNESCO
Учреждение	University of Chicago, IL USA
Период времени	1991 - 1992
Звание/степень	Научный сотрудник Department of Molecular Genetics and Cell Biology /MGCB/ University of Chicago, IL USA / Prof. B. Strauss / Support by International Human Frontier Science Program
Учреждение	ЕГУ
Период времени	1988 - 2000
Звание/степень	Старший лаборант кафедры физиологии и анатомии растений
Учреждение	ЕГУ
Период времени	1984 - 1988
Звание/степень	Лаборант кафедры физиологии и анатомии растений

Научные интересы

- Биохимия, Окружающая среда, Микробиология и Биотехнология

Участие в международных конференциях и семинарах

01/11/1991 - 01/09/1992	Научный сотрудник, Кафедра Молекулярной генетики и клеточной биологии проф. Б. Страус University of Chicago Соединённые Штаты Америки
01/12/1995 - 01/03/1996	International Human Frontier Science Program Fellowship, UNESCO University of Chicago Соединённые Штаты Америки
01/09/1998 - 01/12/1998	International Human Frontier Science Program Fellowship, UNESCO University of Chicago

13/06/2016 - 21st WHEC Congress in Zaragoza, Spain
16/06/2016 Испания

30/06/2022 - 2nd FEMS Conference on Microbiology, Belgrade, Serbia
02/07/2022 Сербия

09/07/2023 - FEMS2023 Congress in Hamburg, Germany
13/07/2023 Германия

Публикации

Статья

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

Статья

Role of the FhIA 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

Статья

Microbial Valorization of Sunflower Husk for Sustainable Biohydrogen and Biomass Production

Llana Vanyan, Akerke Toleugazykyzy, Kaiser Yegizbay, Ayaulym Daniyarova, Lyudmila Zuloyan,

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

Energies 2025 3885

Статья

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

Статья

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

Статья

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

Статья

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

Статья

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 Trchounian

Biochimie 2024 91-98

Статья

Proton conductance and regulation of proton/potassium fluxes in *Escherichia coli* FhIA-lacking cells during fermentation of mixed carbon sources

Heghine Gevorgyan, Anna Poladyan, Karen Trchounian, Anait Vassilian

Archives of Biochemistry and Biophysics 2024 109999

Статья

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

Статья

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

Anush Babayan, Anait Vassilian, Karen Trchounian

AIMS Microbiology 2023 724-737

Статья

The influence of hydrogen production on the formation of metabolic pathways and regulation of Δ pH in *Escherichia coli*

Heghine Gevorgyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

International Journal of Hydrogen Energy 2022 40264-40274

Статья

Metabolic pathways and Δ pH regulation in *Escherichia coli* during the fermentation of glucose and glycerol in the presence of formate at pH 6.5: the role of FhIA transcriptional activator

Heghine Gevorgyan, Satenik Khalatyan, Anait Vassilian, Karen Trchounian

FEMS Microbiology Letters 2022 1-9

Статья

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

Статья

The role of Escherichia coli FhIA 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

Статья

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

Статья

THE ROLE OF PROTON ATPASE SPECIFIC INHIBITOR N,N'-DICYCLOHEXYLCARBODIIMIDE AND EXTERNAL FORMATE CONCENTRATION ON E. COLI GROWTH 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

Статья

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. Vassilian, A. Trchounian, K. Trchounian

Journal of Bioenergetics and Biomembranes 2020 377-382

Статья

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>

Статья

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

Статья

Կրթական ծրագրերում մանրէների բազմազանության և էկոլոգիայի հիմնահարցերի ընդգրկման անհրաժեշտության մասին

Ա.Վ. Վասիլյան, Հ.Հ. Փանոսյան, Ա.Հ. Թոչունյան

Բնագետ 2016 36-40

<http://www.ysu.am/bnaget>

Статья

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/>

Статья

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>

Статья

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>

Конференция

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

Конференция

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

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

Конференция

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

Конференция

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

Конференция

Relationship of dcu transport system and proton ATPase during glycerol fermentation

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

Конференция

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

Конференция

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

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

Конференция

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

Liana Vanyan, Anait Vassilian, Karen Trchounian

Конференция

Is FHL Complex Responsible for Sensing Glucose Concentration?

Liana Vanyan, Anait Vassilian, Karen Trchounian

Конференция

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

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

Конференция

WINE GRAPE WASTE APPLICATION FOR ESCHERICHIA COLI BIOMASS AND H₂ PRODUCTION

Syuzanna Blbulyan, Lusine Baghdasaryan, Satenik Mirzoyan, Anahit Vassilian, Tatiana Semashko,

Anna Poladyan

Конференция

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

Конференция

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

Конференция

ՕՐԳԱՆԱԿԱՆ ԹԱՓՈՆՆԵՐԻՑ ԿԵՆՍԱԶԱՆԳՎԱԾԻ ԵՎ ԿԵՆՍԱԷՆԵՐԳԻԱՅԻ ՓՈԽԱԿԵՐՊՄԱՆ ԿԵՆՍԱՔԻՄԻԱԿԱՆ ՈՐԴՆԵՐԻ ԲՆՈՒԹԱԳՐՈՒՄԸ ԵՎ ՕՔՍԻԴԱԿԵՐԱԿԱՆԳՈՂԱԿԱՆ ԿԱՐԳԱՎՈՐՈՒՄԸ
Փոլադյան Ա.Ա., Գևորգյան Հ.Խ., Վանյան Լ.Մ., Բաբայան Ա.Ռ., Բաղդասարյան Լ.Հ., Վասիլյան Ա.Վ.,

Պետրոսյան Հ.Հ.

Конференция

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

Конференция

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 Anatronikian

Конференция

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

Liana Vanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

Конференция

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

Конференция

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

Конференция

Understanding the Role of Escherichia coli Hydrogenase-2 subunits in proton flux under different glucose concentrations

Liana Vanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

Конференция

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

Конференция

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
