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## 🌐 Знание языков

Հայերեն Русский English

## 🔬 Научные интересы

- Биоэнергетика, Биохимия, Микробиология, Биотехнология

## 🏆 Государственные награды и почетные звания

2016 Премия Моррисона Рогозы Американского общества микробиологии (ASM)

2019 Серебряная медаль по случаю 100-летия ЕГУ

## 📖 Публикации

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

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### **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

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### **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

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### **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

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**Development of an H<sub>2</sub> fuel cell electrochemical system powered by Escherichia coli cells**

Torgom Seferyan, Lusine Baghdasaryan, Meri Iskandaryan, Karen Trchounian, Anna Poladyan

Electrochemistry Communications 2024 107746

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**The antimicrobial effects of silver nanoparticles obtained through the royal jelly on the yeasts Candida guilliermondii NP-4**

Seda Marutyan, Hasmik Karapetyan, Lusine Khachatryan, Anna Muradyan, Syuzan Marutyan,

Anna Poladyan, KarenTrchounian

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**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

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**Valorization of whey-based side streams for microbial biomass, molecular hydrogen, and hydrogenase production**

Anna Poladyan, Karen Trchounian, Ela Minasyan, Meri Iskandaryan, Hayarpi Aghekyan, Sargis Aghayan,

Avetis Tsaturyan, Ani Paloyan, Garabed Antranikian, Lev Khoyetsyan

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**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

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**THE EFFECT OF ANTIOXIDANT ACTIVITY OF PLANTS TRIFOLIUM PRATENSE L. AND CRATAEGUS LAEVIGATA ON LIPID PEROXIDATION IN RAT'S TISSUES EXPOSED TO HYPOBARIC HYPOXIA**

I. A. BADALYAN, A. A. POLADYAN

Proceedings of the YSU B: Chemical and Biological Sciences 2022 239-244

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**BIOMASS AND BIOHYDROGEN PRODUCTION BY ESCHERICHIA COLI UPON CONSUMPTION OF MEAT INDUSTRY AND LIGNOCELLULOSIC CORN WASTES MIXTURE**

Syuzanna Blbulyan, Satenik Mirzoyan, Karen Trchounian, Anna Poladyan

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**Biomass and biohydrogen production during dark fermentation of Escherichia coli using office paper waste and cardboard**

Anna Poladyan, Lena Margaryan, Karen Trchounian, Armen Trchounian  
International Journal of Hydrogen Energy 2020 286-293

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*Статья*

**Application of organic waste glycerol to produce crude extracts of bacterial cells and microbial hydrogenase—the anode enzymes of bio-electrochemical systems**

Anna Poladyan, Syuzanna Blbulyan, Tatiana Semashko, Volha Dziameshka, Liudmila Zhukouskaya,

Armen Trchounian

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**ETHANOL SUPPLEMENTATION AS A NEW APPROACH TO REGULATE GROWTH AND HYDROGEN PRODUCTION OF ESCHERICHIA COLI UPON GLYCEROL FERMENTATION**

A. A. Poladyan

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**Growth of the facultative chemolithoautotroph *Ralstonia eutropha* on organic waste materials: Growth characteristics, redox regulation and hydrogenase activity**

Anna Poladyan, Syuzanna Blbulyan, Mayramik Sahakyan, Oliver Lenz, Armen Trchounian

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**Characterization of hydrogen production by *Escherichia coli* wild-type and mutants of hydrogenases utilizing xylose as fermentation substrate**

Anna Poladyan, Armen Trchounian

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**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

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***Escherichia coli* wild type and hydrogenase mutant cells growth and hydrogen production upon xylose and glycerol co-fermentation in media with different buffer capacities**

Anna Poladyan, Lusine Baghdasaryan, Armen Trchounian

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**Enhancement of *Escherichia coli* bacterial biomass and hydrogen production by some heavy metal ions and their mixtures during glycerol vs glucose fermentation at a relatively wide range of pH**

Karen Trchounian, Anna Poladyan, Armen Trchounian

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**Hydrogen production by Escherichia coli growing in different nutrient media with glycerol: Effects of formate, pH, production kinetics and hydrogenases involved**

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**NEW APPROACHES TO ENHANCE HYDROGEN PRODUCTION FROM GLYCEROL BY ESCHERICHIA COLI**

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**Optimizing strategy for Escherichia coli growth and hydrogen production during glycerol fermentation in batch culture: Effects of some heavy metal ions and their mixtures**

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**Alkanna orientalis (L.) Boiss. plant isolated cultures and antimicrobial activity of their extracts: phenomenon, dependence on different factors and effects on some membrane-associated properties of bacteria.**

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**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)**

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**Redox stress in geobacilli from geothermal springs: Phenomenon and membrane-associated response mechanisms**

Astghik Ghazaryan, Syuzanna Blbulyan, Anna Poladyan, Armen Trchounian

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**Hydrogen-oxidizing hydrogenases 1 and 2 of Escherichia coli regulate the onset of hydrogen evolution and ATPase activity, respectively, during glucose fermentation at alkaline**  
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**Multiple and reversible hydrogenases for hydrogen production by Escherichia coli: dependence on fermentation substrate, pH and the F0F1-ATPase**  
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**Glycerol Fermentation and Hydrogen Metabolism by Escherichia coli: New Approaches to Enhance Hydrogen Production**  
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**Developing hydrogen production biotechnology: cheap substrates, effective strains and optimized fermentative conditions**

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Թռչունյան Կ.Ա., Գաբրիելյան Լ.Ս., Փոլադյան Ա.Ա., Թռչունյան Ա.Հ.

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A. Poladyan, O. Lenz, A. Trchounian

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**Analysis of the Escherichia coli hydrogenases as anodic enzymes in bioelectrochemical system**

Anna Poladyan, Tatyana Semashko, Lyudmila Zhukouskaya, Volha Diameshka, Armen Trchounian

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**Upcycling of office waste paper and cardboard to biohydrogen**

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**Redox regulation of the growth, hydrogenase activity and bioenergetic properties of Ralstonia eutropha upon different carbon source utilization**

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**Prospective Trends in Biotechnology for Biohydrogen**

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**The valorization of whey-based side-streams for microbial biomass, hydrogen and hydrogenase enzyme production**

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**ՕՐԳԱՆԱԿԱՆ ԹԱՓՈՆՆԵՐԻՑ ԿԵՆՍԱԶԱՆԳՎԱԾԻ ԵՎ ԿԵՆՍԱԵՆԵՐԳԻԱՅԻ ՓՈԽԱԿԵՐՊՄԱՆ ԿԵՆՍԱԹԻՄԻԱԿԱՆ ՈՐԴԻՆԵՐԻ ԲՆՈՒԹԱԳՐՈՒՄԸ ԵՎ ՕՔՍԻԴԱԿԵՐԱԿԱՆԳՈՂԱԿԱՆ ԿԱՐԳԱՎՈՐՈՒՄԸ**

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

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Anahit Shirvanyan, Anush Babayan, Alvard Minasyan, Margarit Petrosyan, Anna Poladyan,

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**THE OXIDATIVE STRESS AND T2DM-INDUCED DIABETIC NEPHROPATHY: POSSIBLE PREVENTIVE ACTION OF PANT-BORN OLIGOMERIC POLYPHENOLS**

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**Characteristic effects of gold nanoparticles on growth and H<sub>2</sub> metabolism of *Ralstonia eutropha* H16 and *Escherichia coli***

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

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

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Anna Poladyan, Karen Trchounian, Naira Sahakyan

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**Cupriavidus necator H16 growth and H<sub>2</sub>-oxidizing Activity Using Mixture of Glycerol and Roasted Coffee Waste**

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**Evaluation of an H<sub>2</sub> fuel cell electrochemical system powered by microbial cells**

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**Effect of glycine on the heterotrophic growth and [NiFe]-hydrogenase activity of Cupriavidus necator H16**

M. Iskandaryan, J. Schoknecht, O. Lenz, A. Poladyan

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**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

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