

# Анна Аршаковна Поладян

## Биологический факультет

Կենսաքիմիայի, մանրէաբանության և կենսատեխնոլոգիայի ամբիոն  
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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

Biomass Conversion and Biorefinery 2024 909-919

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

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

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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  
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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

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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  
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**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**

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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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A. Poladyan

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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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**Escherichia coli growth and hydrogen production in batch culture upon formate alone and with glycerol co-fermentation at different pHs**

Karen Trchounian, Varduhi Abrahamyan, Anna Poladyan, Armen Trchounian

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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**

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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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**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**

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**Multiple and reversible hydrogenases for hydrogen production by Escherichia coli: dependence on fermentation substrate, pH and the F<sub>0</sub>F<sub>1</sub>-ATPase**

Karen Trchounian, Anna Poladyan, Anait Vassilian, Armen Trchounian

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**Effect of Different Substrates on Growth and Redox Potential Kinetics of Escherichia coli Wild Type and Hydrogenases Lacking Mutant**

Anna Poladyan, Satenik Mirzoyan, Armen Trchounian

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**Glycerol Fermentation and Hydrogen Metabolism by Escherichia coli: New Approaches to Enhance Hydrogen Production**

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**Escherichia coli growth and hydrogen production upon glycerol fermentation at slightly acidic pH: effects of formate and some heavy metal ions**

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**Hydrogenase Activity of the Facultative Chemolithoautotroph *Ralstonia eutropha* Consuming Brewery Waste**

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

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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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**H<sub>2</sub> - Oxidizing Activity of *Escherichia coli* Upon Utilization of Different Waste Components**

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**Ethanol Affected Bacterial Growth and molecular Hydrogen Production by *Escherichia coli* Upon Fermentation of Glycerol**

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**Prospective Trends in Biotechnology for Biohydrogen**

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**The role of formate neutralization and molecular hydrogen generation in the metabolic flux in *Escherichia coli* during fermentation of mixed carbon sources**

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**Biohydrogen Production from Roasted Coffee Waste: Understanding the Role of *E. coli* Hydrogenases During Fermentation**

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

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**Biomass and biohydrogen production by Escherichia coli upon consumption of meat and lignocellulosic waste mixture**

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**ՕՐԳԱՆԱԿԱՆ ԹՈՓՈՆՆԵՐԻՑ 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.,

Պետրոսյան Հ.Հ.

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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**

Gohar Sahakyan, Anne Vejux, Margarit Petrosyan, Anna Poladyan, Naira Sahakyan

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**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,

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**The role of glycine-betaine in the hydrogen metabolism of Ralstonia eutropha H16**

Meri Iskandaryan, Liana Mnatsakanyan, Anna Poladyan

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**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 Antranikian

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**REDOX REGULATION OF HYDROGEN PRODUCTION IN ESCHERICHIA COLI DURING GROWTH ON BYPRODUCTS OF THE WINE INDUSTRY**

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

Liana Vanyan, Anait Vassilian, Anna Poladyan, Karen Trchounian

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**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

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**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

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