

## Կենսաբանության գիտահետազոտական ինստիտուտ

Մանրէաբանության, կենսաէներգետիկայի և կենսատեխնոլոգիայի  
լաբորատորիա  
Գիտական աշխատող

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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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### **Relationship between proton/ potassium fluxes and central carbon catabolic pathways in different *Saccharomyces cerevisiae* strains under osmotic stress conditions**

Anahit Shirvanyan, Satenik Mirzoyan, Karen Trchounian  
Process Biochemistry 2023 309-318

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### **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

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### **HYDROGEN PRODUCTION AND UTILIZATION OF BREWERY SPENT GRAINS WASTE BY *Escherichia coli***

Satenik Mirzoyan, Armen Trchounian, Karen Trchounian

ԿԵՆՍԱԲԱՆԱԿԱՆ ԵՎ ՄԱԶՈՒՐ ԷՆԵՐԳԻԱՅԻ 7-ՐԴ ՄԻՋԱԶԳԱՅԻՆ ՀԱՄԱԺՈՂՈՎԻ ՆՅՈՒԹԵՐ 2021 65-68

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### **PECULIARITIES OF GROWTH PARAMETERS OF *SACCHAROMYCES CEREVISIAE* UNDER DIFFERENT CONDITIONS**

Anahit H. Shirvanyan, Satenik N. Mirzoyan, Karen A. Trchounian

Proceedings of the YSU B: Chemical and Biological Sciences 2021 255-265

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

Syuzanna Bibulyan, Satenik Mirzoyan, Karen Trchounian, Anna Poladyan

Proceedings of the YSU B: Chemical and Biological Sciences 2021 224-231

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### **Roasted coffee wastes as a substrate for *Escherichia coli* to grow and produce hydrogen**

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**Enhanced hydrogen gas production from mixture of beer spent grains (BSG) and distiller's grains (DG) with glycerol by Escherichia coli**

Satenik Mirzoyan, Akerke Toleugazykyzy, Kairat Bekbayev, Armen Trchounian, Karen Trchounian

International Journal of Hydrogen Energy 2020 17233-17240

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**Hydrogen production by Escherichia coli during anaerobic utilization of mixture of lactose and glycerol: enhanced rate and yield, prolonged production**

Satenik Mirzoyan, Armen Trchounian, Karen Trchounian

International Journal of Hydrogen Energy 2019 9272-9281

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**H<sub>2</sub> PRODUCTION AND ROLE OF HYDROGENASES IN ESCHERICHIA COLI BATCH CULTURES DURING FERMENTATION OF MIXTURE OF GLYCEROL AND ACETATE AT DIFFERENT pHs**

Mirzoyan S.

Biological Journal of Armenia 2019 66-73

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**Prolongation of H<sub>2</sub> 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/)

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**Role of hydrogenases 3 and 4 in Escherichia coli growth and H<sub>2</sub> producing hydrogenase activity during anaerobic utilization of lactose**

Satenik Mirzoyan, Armen Trchounian, Karen Trchounian

International Journal of Hydrogen Energy 2018 18151-18159

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**Evidence for hydrogenase-4 catalyzed biohydrogen production in Escherichia coli**

Satenik Mirzoyan, Pablo Maria Romero-Pareja, Maria Dolores Coello, Armen Trchounian,

Karen Trchounian

International Journal of Hydrogen Energy 2017 21697-21703

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

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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**

Karen Trchounian, Satenik Mirzoyan, Anna Poladyan, Armen Trchounian

International Journal of Hydrogen Energy 2017 24026-24034

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

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Գիտաժողովի նյութ

**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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### **Hydrogen production by Escherichia coli wild type and hydrogenase mutants upon formate and glycerol fermentation under different growth conditions**

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

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### **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

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### **COMPENSATORY H<sub>2</sub> PRODUCING ACTIVITY OF ESCHERICHIA COLI HYDROGENASES DURING MIXED CARBON SOURCES FERMENTATION**

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

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### **H<sub>2</sub> PRODUCIION BY ESCHERICHIA COLI BATCH CULTURES DURING FERMENTATION OF GLYCEROL, LACTOSE AT DIFFERENT pHs**

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

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### **H<sub>2</sub> 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

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S. Mirzoyan, A. Trchounian, K. Trchounian

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### **The impact of FOF1-ATPase on H<sub>2</sub> producing hydrogenase activity in Escherichia coli during mixed carbon sources fermentation**

H. Gevorgyan, S. Mirzoyan, A. Trchounian, K. Trchounian

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### **The effect of the mixture acetate and glycerol on E. coli growth and H<sub>2</sub> production during fermentation**

S. Mirzoyan, A. Trchounian, K. Trchounian

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### **The role of Escherichia coli hydrogenase 3 subunits in hydrogen production during fermentation of high glucose concentration at different pHs**

Hripsime Petrosyan, Satenik Mirzoyan, Armen Trchounian, Karen Trchounian

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### **Role of dcu transporters in proton ATPase dependent proton flux during glucose**

## **fermentation at pH 7.5**

Karen Trchounian, Gayane Mikoyan, Lusine Karapetyan, Satenik Mirzoyan, Antonio Valle, Jorge Bolivar,

Armen Trchounian

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## **The role of several subunits of Escherichia coli hydrogenase 4 in hydrogen production during fermentation of various glucose concentrations at pH 7.5**

Liana Vanyan, Hripsime Petrosyan, Satenik Mirzoyan, Armen Trchounian, Karen Trchounian

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## **Role of F0F1-ATPase in H<sup>+</sup> flux by Escherichia coli during lactose fermentation at different pHs**

Satenik Mirzoyan, Armen Trchounian, Karen Trchounian

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## **Role of dcu C4-dicarboxylate transporters in H<sub>2</sub> production during fermentation of glucose or glycerol**

Lusine Karapetyan, Satenik Mirzoyan, Antonio Valle, Jorge Bolivar, Armen Trchounian, Karen Trchounian

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## **Utilization of tree leaves wastes and molecular hydrogen production by Escherichia coli**

SATENIK MIRZOYAN, KAREN TRCHOUNIAN

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## **Prospects of industrial and kitchen wastes application in H<sub>2</sub> production**

Mirzoyan S., Manoyan J., Gabrielyan L., Trchounian K.

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

S. Mirzoyan, L. Vanyan, H. Aghekyan, A. Poladyan, K. Trchounian

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## **Optimization of Fruits Waste Pretreatment for E. coli Growth and H<sub>2</sub> Production**

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

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

Syuzanna Blbulyan, Anna Poladyan, Satenik Mirzoyan, Liana Mnatsakanyan, Karen Trchounian

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## **Potassium and proton ions transport during glucose fermentation in Saccharomyces cerevisiae under glycerol-induced osmotic stress at different pHs**

A. Shirvanyan, S. Mirzoyan, K. Trchounian

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## **WINE GRAPE WASTE APPLICATION FOR ESCHERICHIA COLI BIOMASS AND H<sub>2</sub> PRODUCTION**

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

Anna Poladyan

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**Regulation of catalase and superoxide dismutase activities by sodium and potassium ions in *Saccharomyces cerevisiae***

A. Shirvanyan, S. Mirzoyan, K. Trchounian

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