Anahit Hambardzum Shirvanyan

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Research Institute of Biology
Laboratory of Microbiology, Bioenergetics and Biotechnology
Scientific Worker

Faculty of Biology
Research Institute of Biology
Laboratory of Microbiology, Bioenergetics and Biotechnology
Scientific Worker

Faculty of Biology
Chair of Biochemistry, Microbiology, and Biotechnology
Lecturer

Education

Institution	Yerevan State University
Faculty	Faculty of Biology, Department of Biochemistry, Microbiology and Biotechnology
Date	2020 - 2023
Degree name	PhD student

Institution	Yerevan State University
Faculty	Faculty of Biology, Department of Biochemistry, Microbiology and Biotechnology
Date	2018 - 2020
Degree name	Masters

Institution	Yerevan State University
Faculty	Faculty of Biology, Department of Biochemistry, Microbiology and Biotechnology
Date	2014 - 2018
Degree name	Bachelor

Scientific Rank/degree

Institution	Yerevan State University
Date	2024
Degree name	Candidate
Scientific Supervisor	Թոչունյան Կարեն Արմենի
Research Topic	The action mechanisms of stress factors on some yeast growth parameters and antioxidant enzymes activity.

Language skills

Հայերեն Русский English

Work experience

Institution	Yerevan State University
Period of time	2023 till now
Rank/degree	Researcher at 23LCG-1F003 “The role of global regulators and transcriptional activators in the regulation of metabolic and bioenergetic parameters of microorganisms under conditions of fermentation and respiration” research grant

Institution	Laboratory of Microbiology, Bioenergetics and Biotechnology of YSU Research Institute of Biology
Period of time	2023 till now
Rank/degree	Junior researcher

Institution	Yerevan State University
Period of time	2021 - 2023
Rank/degree	Researcher at 21AG-4D027 “The potential of plant origin compounds in the development of food and feed preservatives and new biologically active additives” research grant

Institution	Department of Biochemistry, Microbiology and Biotechnology of Faculty of Biology, YSU
Period of time	2019 - 2023
Rank/degree	Senior laboratory assistant

Institution	Norapat secondary school
Period of time	2018 - 2019
Rank/degree	Teacher of Biology

Participation in international conferences and seminars

22/08/2022 - 23/09/2022	Scientific expedition in framework of 21AG-4D027 research grant Gdansk University of Technology Poland
09/07/2022 - 14/07/2022	The Global Biochemistry summit Portugal
01/04/2019 - 19/07/2019	Erasmus+ Research program University of Saarland Germany

Membership

Institution	Armenian Microbiological Association (FEMS constituent society)
Period of time	2023 - 2023

Institution	Armenian Biochemical Association (FEBS founding society)
Period of time	2021 - 2023

Institution	OSA YSU and NAS RA student chapter
Period of time	2020 - 2021

Institution	ArMicro ASM Student Chapter
Period of time	2019 - 2023

Institution	Union of Biologists of Armenia
Period of time	2016 - 2023

Institution	YSU Student Scientific Society
Period of time	2014 - 2020

Publications

Article

Optimized biomass and bioethanol production from dairy industry side streams by Saccharomyces cerevisiae ATCC 13007 under aerobic and microaerophilic conditions

Liana Anikian, Anahit Shirvanyan, Ani Paloyan, Mari Gasparyan, Karen Trchounian, Anna Poladyan

Cleaner Engineering and Technology 2026 101160

https://www.scopus.com/pages/publications/105029076864?origin=resultslist

Article

Thiol groups are determinant for overcoming acetic acid and pH stress in wine and beer fermentation-derived Saccharomyces cerevisiae strains

Anahit Shirvanyan, Angela Primavera, Nicoletta Guaragnella, Rodrigo Ledesma-Amaro,

Karen Trchnounian

FEMS Yeast Research 2026 1-16

https://www.scopus.com/pages/publications/105029839104?origin=resultslist

Article

Mitochondrial dysfunction redirects proton transport and energy homeostasis in Saccharomyces cerevisiae under variable pH and glucose conditions

Liana Anikyan, Anahit Shirvanyan, Nicoletta Guaragnella, Karen Trchounian

Biochimica et Biophysica Acta (BBA) - Bioenergetics 2026 149595

https://doi.org/10.1016/j.bbabio.2026.149595

Article

The potential of blackcurrant, fig, and grape leaf extracts in the development of new preparations for overcoming antibiotic resistance and enhancing the efficacy of chemotherapeutic agents

Mikayel Ginovyan, Silvard Tadevosyan, Anahit Shirvanyan, Anush Babayan, Barbara Kusznierewicz, Izabela Koss-Mikołajczyk, Marika Mróz, Agnieszka Bartoszek, Naira Sahakyan

BMC Complementary Medicine and Therapies 2025 1-54

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

Bioenergetic differences in Saccharomyces cerevisiae ATCC 9804 during growth on glucose or glycerol under aerobic conditions

Anahit Shirvanyan, Nicoletta Guaragnella, Karen Trchounian

2025 339-339

https://www.femsmicro.org/

Conference

Acetic acid-induced alterations in H+ and K+ fluxes in Saccharomyces cerevisiae ATCC 9804: Implications for stress adaptation and industrial fermentation

Gohar Azbekyan, Anahit Shirvanyan, Karen Trchounian

2025 142 - 142

https://www.femsmicro.org/

Conference

Biomass and bioethanol production from dairy waste by Saccharomyces cerevisiae ATCC 13007

Liana Anikyan, Anahit Shirvanyan, Karen Trchounian, Anna Poladyan

2025 354 - 354

https://www.femsmicro.org/

Conference

Hap4 System-Regulated Plasma Membrane Proton Fluxes are Crucial for Saccharomyces Cerevisiae Adaptation to Varying Ph, Oxygen, and Glucose Concentrations

Liana Anikyan, Anahit Shirvanyan, Karen Trchounian

2025 27 - 27

https://www.ysu.am/en/conference/869

Conference

The Action Mechanisms of Acetic Acid Stress on Industrial Strains of Saccharomyces Cerevisiae Under Fermentation and Respiration

Anahit Shirvanyan, Nicoletta Guaragnella, Karen Trchounian

2025 48 - 48

https://www.ysu.am/en/conference/869

Conference

Influence of Menthol on Ion Fluxes and Atpase Activity in Antibiotic-Resistant E. Coli Under Aerobic and Anaerobic Conditions

Silvard Tadevosyan, Anahit Shirvanyan, Karen Trchounian, Naira Sahakyan

2025 152 - 152

https://www.ysu.am/en/conference/869

Conference

Inhibitory Effect of Acetic Acid on the Fermentative Metabolism in Saccharomyces Cerevisiae ATCC 9804 At pH 3.0.

G. S. Azbekyan, A. H. Shirvanyan, K. A. Trchounian

2025 188 - 188

https://www.ysu.am/en/conference/869

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

Sodium transport and redox regulation in Saccharomyces cerevisiae under osmotic stress depending on oxygen availability

Anahit Shirvanyan, Karen Trchounian

Scientific Reports 2024 23982

Conference

The role of Saccharomyces cerevisiae ATPases in adaptation mechanisms to osmotic stress under aerobic conditions

A. Shirvanyan, K. Trchounian

2024 193 - 194

https://2024.febscongress.org/

Conference

From metabolomics to medicine: exploiting the functional potential of plant extracts in human health, with emphasis on Ribes nigrum, Ficus carica and Vitis vinifera

S. Tadevosyan, M. Ginovyan, N. Avtandilyan, A. Shirvanyan, A. Bartoszek, N. Sahakyan

2024 164-165

https://2024.febscongress.org/

Conference

From agro-bio-waste to application: the power of bilberry aerial part extract as anti-cancer and antibiotic-modulating agent

N. Sahakyan, M. Ginovyan, A. Babayan, A. Shirvanyan, A. Minasyan, B. Kusznierewicz,

I. Koss-Mikołajczyk, N. Avtandilyan, A. Bartoszek

2024 179-180

https://2024.febscongress.org/

Conference

Harnessing plant extracts to overcome antibiotic resistance: leaf extracts of Ribes nigrum, Ficus carica, and Vitis vinifera as resistance modifiers of E. coli strains

M. Ginovyan, A. Shirvanyan, S. Tadevosyan, A. Babayan, B. Kusznierewicz, N. Avtandilyan, A. Bartoszek,

N. Sahakyan

2024 338 - 338

https://2024.febscongress.org/

Conference

The impact of acetic acid stress on growth parameters and sodium flux of Saccharomyces cerevisiae strains under varying oxygen conditions

Anahit H. Shirvanyan, Gohar S. Azbekyan, Karen A. Trchounian

2024 129-130

https://www.ebec2024.org/

Conference

Impact of menthol on ATPase activity and ion flux in antibiotic-resistant Escherichia coli

Silvard K. Tadevosyan, Anahit Shirvanyan, Karen Trchounian, Naira Sahakyan

2024 87-87

https://www.ebec2024.org/

Article

EVALUATION OF ETHANOL AND BIOMASS PRODUCTION RATE BY DIFFERENT SACCHAROMYCES CEREVISIAE STRAINS DEPENDING ON EXTERNAL pH AND TEMPERATURE

Anahit H. Shirvanyan

Proceedings of the YSU B Chemical and Biological Sciences 2023 141-153

Article

The Action Mechanisms, Anti-Cancer and Antibiotic-Modulation Potential of Vaccinium myrtillus L. Extract

Mikayel Ginovyan, Anush Babayan, Anahit Shirvanyan, Alvard Minasyan, Meri Qocharyan,

Barbara Kusznierewicz, Izabela Koss-Mikołajczyk, Nikolay Avtandilyan, Anne Vejux, Agnieszka Bartoszek,

Naira Sahakyan

Discovery Medicine 2023 590-611

Article

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

Article

CHEMICAL COMPOSITION AND ANTIBACTERIAL ACTIVITY OF ESSENTIAL OIL OF MENTHA ARVENSIS L. HARVESTED AT HIGH ALTITUDE ARMENIAN FLORA

S. K. TADEVOSYAN, A. H. SHIRVANYAN, A. A. MARKOSIAN, M. T. PETROSYAN, N. Zh. SAHAKYAN

Proceedings of the YSU B Chemical and Biological Sciences 2023 230-237

Conference

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

A. Shirvanyan, S. Mirzoyan, K. Trchounian

2023 107-108

https://2023.febscongress.org/

Conference

THE OXIDATIVE STRESS AND POSSIBLE PREVENTIVE ACTION OF PLANT BORN POLYPHENOLS
Anahit Shirvanyan, Anush Babayan, Alvard Minasyan, Margarit Petrosyan, Anna Poladyan,

Naira Sahakyan

2023 246-248

https://www.functionalfoodscenter.net/registration-form_ffc31.html

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Conference

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

2022 179-180

https://2022congress.febs-iubmb-pabmb.org

Conference

Antimicrobial and antioxidant potential of some plant crude extract
Margarit Petrosyan, Alvard Minasyan, Anahit Shirvanyan, Anush Babayan, Mikayel Ginovyan,

Naira Sahakyan

2022 812-813

https://www.femsbelgrade2022.org/

Conference

Prospects for the use of Ficus carica L. leave extract as bio-preservative agent
Anahit Shirvanyan, Alvard Minasyan, Anush Babayan, Armine Moghrovyan, Naira Sahakyan,

Margarit Petrosyan, Karen Trchounian

2022 373-374

https://www.femsbelgrade2022.org/

Article

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

Conference

The effect of hydrogen peroxide-induced oxidative stress on catalase activity in yeast Sacharomyces cerevisiae
Shirvanyan A.H, Karapetyan H.M.

2021 68-69

http://mbio.bas-net.by/2021/index.php

Article

Changes of ATPase activity and lipid peroxidation in conditions of long-term hypokinesia
Shirvanyan A. A., Karapetyan H. M., Trchounian A. H.

Biological Journal of Armenia 2020 80-84
