

# Hayarpi Gevorg Javrushyan

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hg.javrushyan@ysu.am



## Research Institute of Biology

Signal transduction and experimental pathology research group from  
Group Leader

## Education

<b>Institution</b>	YSU
<b>Faculty</b>	Biology/Biochemistry
<b>Date</b>	2008 - 2010
<b>Degree name</b>	Masters

<b>Institution</b>	YSU
<b>Faculty</b>	Biology/Biochemistry
<b>Date</b>	2004 - 2008
<b>Degree name</b>	Bachelor

## Scientific Rank/degree

<b>Institution</b>	YSU
<b>Date</b>	2014
<b>Degree name</b>	Candidate
<b>Specialty</b>	Biological sciences
<b>Scientific Supervisor</b>	Ph.D, Professor, M.A. Davtyan
<b>Research Topic</b>	Influence of NO on the urea cycle

## Language skills

English Русский

## Work experience

<b>Institution</b>	Yerevan State University
<b>Period of time</b>	2025 till now
<b>Rank/degree</b>	Signal Transduction and Experimental Pathology Research group leader

<b>Institution</b>	Yerevan State University
<b>Period of time</b>	2023 till now
<b>Rank/degree</b>	assistant professor

<b>Institution</b>	YSU
<b>Period of time</b>	2023 - 2025
<b>Rank/degree</b>	Research group leader

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<b>Institution</b>	YSU
<b>Period of time</b>	2016 - 2022
<b>Rank/degree</b>	Junior researcher

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## Scientific interests

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- Biochemistry of cancer, biochemical mechanisms of hypoxia, biochemistry of type 2 diabetes, molecular mechanisms of signaling systems, in vivo animal models, preclinical research
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## Participation in international conferences and seminars

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<b>07/10/2024 - 12/10/2024</b>	Erasmus+ Staff Training week "Implementation and Development of Erasmus+ (KA 1+2)" Saarland University Germany
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<b>31/08/2024 - 01/09/2024</b>	Modelling immunotherapy response and toxicity in cancer" (IMMUNO-model) CA21135 Dublin City University Ireland
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## Membership

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<b>Institution</b>	The European Association for Cancer Research
<b>Period of time</b>	2024 till now

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<b>Institution</b>	The Federation of the European Biochemical Societies
<b>Period of time</b>	2012 till now

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## Other information

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<https://www.bok.am/user/36305>

## Publications

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*Article*

**Elucidating the impact of Hypericum alpestre extract and L-NAME on the PI3K/Akt signaling pathway in A549 lung adenocarcinoma and MDA-MB-231 triple-negative breast cancer cells**  
Hayarpi Javrushyan, Mikayel Ginovyan, Tigran Harutyunyan, Smbat Gevorgyan, Zaruhi Karabekian,

*Article*

**ALTERATIONS IN ARGINASE ACTIVITY, NITRIC OXIDE, AND MDA LEVELS IN BONE MARROW DURING DMBA-INDUCED BREAST CANCER IN RATS**

Svetlana M. Hovhannisyanyan, Aqsana S. Hakobyan, Arpine N. Hakobyan, Astghik A. Mkrtchyan,

Hayarpi G. Javrushyan

Proceedings of the YSU B: Chemical and Biological Sciences 2025 113-121

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*Article*

**Hypericum alpestre extract exhibits in vitro and in vivo anticancer properties by regulating the cellular antioxidant system and metabolic pathway of L-arginine**

Mikayel Ginovyan, Hayarpi Javrushyan, Hasmik Karapetyan, Izabela Koss-Mikołajczyk,

Barbara Kusznierevicz, Anna Grigoryan, Alina Maloyan, Agnieszka Bartoszek, Nikolay Avtandilyan

Cell Biochemistry and Function 2024 1-21

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*Article*

**5-fluorouracil and Rumex obtusifolius extract combination trigger A549 cancer cell apoptosis: uncovering PI3K/Akt inhibition by in vitro and in silico approaches**

Mikayel Ginovyan, Hayarpi Javrushyan, Svetlana Hovhannisyanyan, Edita Nadiryan, Gohar Sevoyan,

Tigran Harutyunyan, Smbat Gevorgyan, Zaruhi Karabekian, Alina Maloyan, Nikolay Avtandilyan

Scientific Reports 2024 1-16

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*Article*

**Royal Jelly-Mediated Silver Nanoparticles Show Promising Anticancer Effect on HeLa and A549 Cells Through Modulation of the VEGFa/PI3K/Akt/MMP-2 Pathway**

Meri Kocharyan, Syuzan Marutyan, Edita Nadiryan, Mikayel Ginovyan, Hayarpi Javrushyan,

Seda Marutyan, Nikolay Avtandilyan

Applied Organometallic Chemistry 2024 1-11

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*Article*

**Anti-cancer effect of in vivo inhibition of nitric oxide synthase in a rat model of breast cancer**

Nikolay Avtandilyan, Hayarpi Javrushyan, Mikayel Ginovyan, Anna Karapetyan, Armen Trchounian

Molecular and Cellular Biochemistry 2023 261-275

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*Article*

**Anti-cancer effect of Rumex obtusifolius in combination with arginase/nitric oxide synthase inhibitors via downregulation of oxidative stress, inflammation, and polyamine synthesis**

Mikayel Ginovyan, Hayarpi Javrushyan, Gayane Petrosyan, Barbara Kusznierevicz,

Izabela Koss-Mikołajczyk, Zuzanna Koziara, Monika Kuczyńska, Patrycja Jakubek, Anna Karapetyan,

Naira Sahakyan, Alina Maloyan, Agnieszka Bartoszek, Nikolay Avtandilyan

International Journal of Biochemistry & Cell Biology 2023 106396

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*Article*

**Screening revealed the strong cytotoxic activity of Alchemilla smirnovii and Hypericum alpestre ethanol extracts on different cancer cell lines**

Mikayel Ginovyan, Svetlana Hovhannisyanyan, Hayarpi Javrushyan, Gohar Sevoyan, Zaruhi Karabekyan,

Narine Zakaryan, Naira Sahakyan, Nikolay Avtandilyan

*Article*

**THE CYTOTOXIC PROPERTIES OF ALCHEMILLA SMIRNOVII EXTRACT ON THE HELA CANCER CELLS VIA DOWNREGULATION OF ARGINASE ACTIVITY**

S.M. Hovhannisyanyan, E.E. Nadiryan, M.V. Qocharyan, G.H. Petrosyan, G.P. Sevoyan, Z.I. Karabekyan, H.G. Javrushyan, M.M. Ginovyan, N.V. Avtandilyan

ԵՊՀ գիտական տեղեկագիր. Թիմիա և կենսաբանություն: 2023 238-247

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*Article*

**REGULATORY EFFECTS OF RUMEX OBTUSIFOLIUS AND HYPERICUM ALPESTRE EXTRACTS ON THE QUANTITY OF IL-2 IN IN VITRO AND IN VIVO CANCER MODELS**

E.E. Nadiryan, S.M. Hovhannisyanyan, M. V. Qocharyan, G.H. Petrosyan, H.G. Javrushyan, M.M. Ginovyan, N.V. Avtandilyan

ԵՊՀ գիտական տեղեկագիր. Թիմիա և կենսաբանություն: 2023 248-257

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*Article*

**Antihyperglycemic activity of L-norvaline and L-arginine in high-fat diet and streptozotocin-treated male rats**

Hayarpi Javrushyan, Edita Nadiryan, Anna Grigoryan, Nikolay Avtandilyan, Alina Maloyan

Experimental and Molecular Pathology 2022 104763

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*Article*

**The effects of NO on the urea cycle pathway in short-term intermittent hypobaric hypoxia in rats**

Hayarpi Javrushyan, Nikolay Avtandilyan, Armen Trchounian

Respiratory Physiology and Neurobiology 2021 103598

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*Article*

**NEW THERAPEUTIC APPROACHES IN BREAST ANTICANCER TREATMENT USING ARMENIAN HERBAL EXTRACTS**

H.G. JAVRUSHYAN, N.V. AVTANDILYAN, M.M. GINOVYAN, A.H. TRCHOUNIAN

Biological Journal of Armenia 2021 32-38

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*Article*

**The potential therapeutic effect of NG-hydroxy-nor-L-arginine in 7,12-dimethylbenz(a)anthracene-induced breast cancer in rats**

Nikolay Avtandilyan, Hayarpi Javrushyan, Anahit Mamikonyan, Anna Grigoryan, Armen Trchounian

Experimental and Molecular Pathology 2019 1-10

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*Article*

**NG-ՀԻԴՐՕՔՍԻ-ՆՈՐ-Լ-ԱՐԳԻՆԻՆԻ ՀԱԿԱՌԻՈՒՑՔԱՅԻՆ ԱՁԴԵՑՈՒԹՅՈՒՆԸ 7.12-ԴԻՄԵԹԻԼԲԵՆՁԱՆՏՐԱՑԵՆՈՎ ԽԹԱՆՎԱԾ ԱՌՆԵՏՆԵՐԻ ԿՐԾՔԱԳԵՂՁԻ ԶԱՐՑԿԵՐԻ ՓՈՐՁԱՐԱՐԱԿԱՆ ՄՈՂԵԼՈՒՄ**

Ավթանդիլյան Էլվիրա, Թովմասյան Մարիամ, Մամիկոնյան Անահիտ, Ջավրուշյան Հայարպի

ԵՊՀ ՈԻԳԸ գիտական հոդվածների ժողովածու 2019 114-121

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*Article*

**The Involvement of Arginase and Nitric Oxide Synthase in Breast Cancer Development: Arginase and NO Synthase as Therapeutic Targets in Cancer**

Nikolay Avtandilyan, Hayarpi Javrushyan, Gayane Petrosyan, Armen Trchounian

BioMed Research International 2018 8696923,9

<https://www.hindawi.com/journals/bmri/2018/8696923/>

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*Article*

**THE CHANGE OF POLYAMINES AND NITRIC OXIDE QUANTITIES IN HUMAN BLOOD SERUM OF PROSTATE AND BLADDER CANCER**

H. Javrushyan, N. Avtandilyan, A. Mamikonyan, A. Trchounian

Biological Journal of Armenia 2017 125-132

<http://biology.asj-oa.am/view/year/2017.html>

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*Article*

**DIETHYLAMINE NONOate INFLUENCE ON RATS UREA CYCLE ENZYMES ACTIVITY AFTER AND BEFORE HYPOXIA**

H. G. Javrushyan, M. H. Khachatryan

Electronic Journal of Natural Sciences of NAS RA 2016 15-19

<http://ejns.sci.am>

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*Article*

**EFFECT OF HYPOXIA ON THE ACTIVITY OF UREA CYCLE ENZYMES**

H. G. Javrushyan, M. H. Khachatryan, M.A. Davtyan

Electronic Journal of Natural Sciences of NAS RA 2014 13-16

<http://ejns.sci.am>

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*Article*

**THE INFLUENCE OF NG -HYDROXY-L-ARGININE ON THE ACTIVITY OF THE UREA CYCLE ENZYMES**

H. G. JAVRUSHYAN

Biological Journal of Armenia 2014 113-117

<http://www.flib.sci.am/eng/Biology/>

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*Conference*

**INHIBITION OF NOS ACTIVITY AS AN EFFECTIVE ANTICANCER THERAPY AGAINST 7,12-DMBA RAT MODEL OF BREAST CANCER**

Mamikonyan A., Avtandilyan N., Javrushyan H., Trchounian A.

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*Conference*

**Arginase is an enzyme with real tricks in antitumor treatment of 7,12-dimethylbenz(a) anthracene induced breast cancer in rats**

G.Petrosyan, N. Avtandilyan, H. Javrushyan, A. Trchounian

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*Conference*

**The change of polyamines and NO quantities in different stages of breast and prostate cancers**

H. Javrushyan, A. Trchounian

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*Conference*

**Inhibition of breast cancer tumorigenesis by NG-Nitro-L-arginine methyl ester in rats**

H. Javrushyan, A. Trchounian

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Conference

**Polyamines deprivation as a targeted therapy for mammary carcinoma in rats induced by 7,12-dimethylbenz[a]anthracene**

H. Javrushyan, A. Mamikonyan, A. Trchounian

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Conference

**Effect of L-arginine catabolic enzymes inhibitors on 7,12-dimethylbenz(a)anthracene-induced mammary tumors in rats**

NIKOLAY AVTANDILYAN, HAYARPI JAVRUSHYAN, ANAHIT MAMIKONYAN, ARMEN TRCHOUNIAN

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Conference

**Suppression of tumor progression by arginase and NO-synthase combined inhibition in 7,12-dimethylbenz(a)anthracene-induced breast cancer in rats**

A. Mamikonyan, H. Javrushyan, N. Avtandilyan, A. Trchounian

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Conference

**Upregulation of nitric oxide quantity by L-norvaline and L-arginine in high-fat diet and Streptozotocin-treated male rats**

E. Nadiryan, H. Javrushyan, N. Avtandilyan, A. Maloyan

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Conference

**Hypericum alpestre combined with arginase and NOS inhibitors shows antiproliferative activity in the rat breast cancer model**

H. Javrushyan, N. Avtandilyan, S. Hovhannsiyan, M. Qocharyan, M. Ginovyan, A. Maloyan

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Conference

**Anti-inflammatory and immunostimulatory effect of Hypericum alpestre combined with arginase and NOS inhibitors in the rat breast cancer model**

H. Javrushyan, E. Nadiryan, G. Petrosyan, M. Ginovyan, A. Maloyan, N. Avtandilyan

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Conference

**New therapeutic approach in breast anti-cancer treatment using a combination of Rumex obtusifolius extract and L-arginine pathway inhibitors**

N. Avtandilyan, H. Javrushyan, A. Karapetyan, M. Ginovyan

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Conference

**Evaluation of immunostimulatory effect of combination of herbal extracts and chemotherapeutic drugs by quantitative alteration of interleukin-2**

H. Javrushyan, G. Sevoyan, M. Ginovyan, Z. Karabekian, N. Avtandilyan

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Conference

**Adipose Tissue Dysfunction in the Offspring of Obese Mothers**

Hayarpi Javrushyan, Yem J Alharithi, Nolan Gregg, Sushil Kumar, Alina Maloyan

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Conference

**The combination of herbs and chemotherapeutic agents inhibits tumor progression via down-regulation of the TNF $\alpha$ -VEGF $\alpha$ /PI3K/Akt/NOS/COX-2-MMP-2 pathway in DMBA-induced breast cancer in rats**

N. Avtandilyan, M. Kocharyan, S. Hovhannsiyan, S. Gevorgyan, H. Javrushyan, M. Ginovyan, A. Maloyan

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Conference

**ANTI-CANCER PROPERTIES AND POTENTIAL MOLECULAR MECHANISMS OF COMBINATIONS OF HERBAL EXTRACTS AND CHEMOTHERAPEUTIC AGENTS**

N. Avtandilyan, H. Javrushyan, H. Karapetyan, A. Grigoryan, E. Nadiryan, G. Sevoyan, M. Ginovyan,

A. Maloyan

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Conference

**Enhanced anti-inflammatory and antiproliferative effects of Inula helenium herbal extract and arginase inhibitor in breast cancer in vivo study**

E. Nadiryan, H. Javrushyan, N. Avtandilyan

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Conference

**Interconnection between hyperglycemia, cancer, and arginine metabolism: a unified therapeutic approach**

E.Nadiryan, H.Javrushyan, N.Avtandilyan

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Conference

**Hypericum alpestre Inhibits PI3K/Akt/mTOR and HIF-1 $\alpha$  Signaling While Activating Caspase-3 in MDA-MB-231 Cells: A Comparative Study with Dactolisib and Doxorubicin**

H. Javrushyan, N. Avtandilyan, A. Maloyan

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Conference

**Synergistic Inhibition of HIF1 $\alpha$  and PI3K/Akt Signaling and Activation of Caspase3 by Emodin and Metformin Combination in MDAMB231 Cells**

M. Kocharyan, H. Javrushyan, N. Avtandilyan

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Conference

**Phytochemicals and Chemotherapy: Present and Future Strategy**

Hayarpi Javrushyan, Edita Nadiryan, Nikolay Avtandilyan, Alina Maloyan

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Conference

**Modulating Bone Marrow Microenvironment in Breast Cancer: Impact of Combined Chemotherapy and Herbal Extracts**

Edita Nadiryan, Gayane Petrosyan, Nikolay Avtandilyan, Hayarpi Javrushyan

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Conference

**Hypericum alpestre Extract and L-NAME Suppress PI3K/Akt Pathway and Enhance Apoptosis in Lung and Breast Cancer Cells**

Svetlana Hovhannisyan, Gayane Petrosyan, Hayarpi Javrushyan, Mikayel Ginovyan, Nikolay Avtandilyan

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Conference

**Hypoxia-Linked Alterations in Arginine Metabolism and Oxidative Stress in the Bone Marrow during Breast Cancer Progression and Treatment**

Hayarpi Javrushyan, Edita Nadiryan, Svetlana Hovhannisyan, Nikolay Avtandilyan

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