Tigran Ashot Harutyunyan

tigranharutyunyan@ysu.am

Research Institute of Biology
Genomic Instability and Molecular Mutagenesis Group
Group Leader

Faculty of Biology
Research Institute of Biology
Genomic Instability and Molecular Mutagenesis Group
Group Leader

Faculty of Biology
Chair of Genetics and Cytology
Associate professor

Education

Institution	Yerevan State University
Faculty	Faculty of Biology, Department of Genetics and Cytology
Date	2012 - 2015
Degree name	PhD student

Institution	Yerevan State University
Faculty	Faculty of Biology, Department of Genetics and Cytology
Date	2010 - 2012
Degree name	Masters

Institution	Yerevan State University
Faculty	Faculty of Biology, Department of Genetics and Cytology
Date	2006 - 2010
Degree name	Bachelor

Scientific Rank/degree

Institution	Yerevan State University
Date	2021
Degree name	Associate professor

Institution	Yerevan State University
Date	2015
Degree name	Candidate
Scientific Supervisor	Rouben Aroutiounian

Research Topic	GENOTOXIC, MOLECULAR-CYTOGENETIC AND EPIGENETIC EFFECTS OF MYCOTOXINS AND THEIR COMBINATION IN VIVO AND IN VITRO

Language skills

Русский English

Work experience

Institution	Yerevan State University, Research Institute of Biology, Laboratory of General and Molecular Genetics
Period of time	2025 till now
Rank/degree	Group leader

Institution	Yerevan State University, Department of Genetics and Cytology
Period of time	2021 till now
Rank/degree	Associate Professor

Institution	Yerevan State University, Research Institute of Biology, Laboratory of General and Molecular Genetics
Period of time	2018 till now
Rank/degree	Researcher

Institution	Institute of Human Genetics Jena (Germany)
Period of time	2014 till now
Rank/degree	Research Fellow

Institution	Yerevan State University, Department of Genetics and Cytology
Period of time	2010 - 2020
Rank/degree	Senior Laboratory Assistant

Participation in international conferences and seminars

20/12/2024 - 19/01/2025	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany

20/09/2024 - 19/10/2024	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany

05/10/2022 - 02/11/2022	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany
01/11/2021 - 31/12/2021	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany
01/06/2019 - 30/08/2019	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany
14/12/2018 - 14/01/2019	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany
01/05/2018 - 30/06/2018	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany
29/11/2016 - 05/12/2016	Conference Tokyo University Japan
01/08/2017 - 05/10/2017	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany
11/12/2017 - 17/12/2017	Research stay Southern Federal University Russian Federation (the)
12/08/2014 - 12/09/2014	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany
01/05/2014 - 30/06/2014	Research stay Friedrich Schiller University Jena, Institute of Human Genetics Germany

Publications

Conference

New biomarkers of genomic instability for evaluation of genotoxic effects of accelerated electron radiation in human cells

Harutyunyan T, Hovhannisyan G, Sargsyan A, Kalashyan L, Avagyan E, Tadevosyan G, Baghdasaryan L, Babayan N, Grigoryan B, Davtyan H, Liehr T, Aroutiounian R

2026 13 - 14

http://candle.am/uba26/

Article

Circular RNAs as key regulators in cancer hallmarks: New progress and therapeutic opportunities

Bashdar Mahmud Hussen, Snur Rasool Abdullah, Rayan Mazin Jaafar, Mohammed Fatih Rasul, Rouben Aroutiounian, Tigran Harutyunyan, Thomas Liehr, Majid Samsami, Mohammad Taheri

Critical Reviews in Oncology/Hematology 2025 104612

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, Alina Maloyan, Nikolay Avtandilyan

PLOS ONE 2025 e0303736

Article

Knockdown of histone H1–5 gene affects the sensitivity of MRC-5 and HeLa cells to DNA damaging agents

Tigran Harutyunyan, Anzhela Sargsyan, Gohar Tadevosyan, Lily Kalashyan, Rouben Aroutiounian, Galina Hovhannisyan

Human Gene 2025 1-9

Conference

Genotoxic effects of low LET irradiation by electron pulses in human cells

R.M. Aroutiounian, G.G. Hovhannisyan, N. S. Babayan, A.A. Sargsyan, B.A. Grigoryan, T. Liehr, T.A. Harutyunyan

2025 19 - 19

https://imb.am/rad2025/

Conference

Telomere Lengths of Human Chromosomes as Potential Biomarkers of Genomic Instability Induced by Electron Beam Radiation

L.A. Kalashyan, A.A. Sargsyan, B.A. Grigoryan, H.D. Davtyan, R.M. Aroutiounian, T. Liehr, G.G. Hovhannisyan, T.A. Harutyunyan

2025 41 - 41

https://imb.am/rad2025/

Conference

8-OHdG Elevation in Hypoxic COVID-19: A Potential Link to Inflammation and Disease Severity

Tigran Harutyunyan, Gohar Tadevosyan, Anzhela Sargsyan, Lily Kalashyan, Naira Stepanyan, Rouben Aroutiounian, Galina Hovhannisyan

2025 78 - 78

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

Conference

Leukocyte Telomere Length Changes in Hypoxic COVID-19 patients

Tigran Harutyunyan, Anzhela Sargsyan, Lily Kalashyan, Naira Stepanyan, Thomas Liehr,

Rouben Aroutiounian, Galina Hovhannisyan

2025 85 - 85

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

Conference

Micronuclei levels in doxorubicin- and mitomycin C-treated MRC-5 and HeLa cells with knockdown of the histone H1-5 gene

T. Harutyunyan, A. Sargsyan, G. Tadevosyan, L. Kalashyan, R. Aroutiounian, G. Hovhannisyan

2025 152 - 152

https://crispr2025.rau.am/

Conference

Hybrid Track-Etched Membranes as Antiviral Filters

Rouben Aroutiounian, Tigran Harutyunyan, Anzhela Sargsyan, Evgeny Andreev, Alexander Nechaev,

Pavel Apel, Galina Hovhannisyan, Hovakim Zakaryan

2025 86-86

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

Article

The known unknowns of mitochondrial carcinogenesis: de novo NUMTs and intercellular mitochondrial transfer

Tigran Harutyunyan

Mutagenesis 2024 1-12

Article

Changes in Telomere Length in Leukocytes and Leukemic Cells after Ultrashort Electron Beam Radiation

Tigran Harutyunyan, Anzhela Sargsyan, Lily Kalashyan, Hovhannes Igityan, Bagrat Grigoryan,

Hakob Davtyan, Rouben Aroutiounian, Thomas Liehr, Galina Hovhannisyan

International Journal of Molecular Sciences 2024 6709

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 Hovhannisyan, Edita Nadiryan, Gohar Sevoyan,

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

Scientific Reports 2024 1-16

Article

CELL-FREE MITOCHONDRIAL DNA IN DOXORUBICIN-TREATED KCL22 AND K562 CELL LINES

Tigran A. Harutyunyan, Anzhela A. Sargsyan, Lily A. Kalashyan, Hovhannes A. Igityan,

Rouben M. Aroutiounian, Galina G. Hovhannisyan

Proceedings of the YSU B Chemical and Biological Sciences 2024 9-16

Article

Enhancing virus inhibition in track-etched membranes through surface modification with silver nanoparticles and curcumin

Evgeny Andreev, Hovakim Zakaryan, Tigran Harutyunyan, Ludmila Molokanova, Uliana Pinaeva,

Arnoux Rossouw, Alexander Nechaev, Pavel Apel, Rouben Aroutiounian

Surfaces and Interfaces 2024 1-8

Article

DNA Damage in Moderate and Severe COVID-19 Cases: Relation to Demographic, Clinical, and Laboratory Parameters

Tigran Harutyunyan, Anzhela Sargsyan, Lily Kalashyan, Naira Stepanyan, Rouben Aroutiounian, Thomas Liehr, Galina Hovhannisyan

International Journal of Molecular Sciences 2024 10293

Article

ANALYSIS OF DOXORUBICIN-INDUCED MITOCHONDRIAL DNA DELETIONS IN HUMAN BLOOD LEUKOCYTES AND THP-1 CELL LINE BY PCR

Tigran A. Harutyunyan

Proceedings of the YSU B Chemical and Biological Sciences 2023 32-40

Article

EVALUATION OF GENOTOXIC EFFECTS IN COVID-19 PATIENTS AS A POTENTIAL MARKER OF VIRUS-HOST ADAPTATION

Tigran Harutyunyan, Anzhela Sargsyan, Nara Stepanyan, Galina Hovhannisyan, Rouben Aroutiounian

ARMENIAN MEETING “Climate Changes: Adaptation” Yerevan, March 27–28, 2023 ABSTRACTS PAPERS BY YOUNG SCIENTISTS
2023 8-10

Article

DNA DAMAGE INDUCED BY ULTRASHORT PULSED ELECTRON BEAM IRRADIATION IN HUMAN CANCER AND NORMAL CELLS

Alisa Manukyan, Nelly Babayan, Lusine Khondkaryan, Ruzanna Grigoryan, Natalya Sarkisyan, Tigran Harutyunyan, Bagrat Grigoryan, Rouben Aroutiounian

ARMENIAN MEETING “Climate Changes: Adaptation” Yerevan, March 27–28, 2023 ABSTRACTS PAPERS BY YOUNG SCIENTISTS
2023 11-14

Article

The Diagnostic, Prognostic, and Therapeutic Potential of Cell-Free DNA with a Special Focus on COVID-19 and Other Viral Infections

Galina Hovhannisyan, Tigran Harutyunyan, Rouben Aroutiounian, Thomas Liehr

International Journal of Molecular Sciences 2023 14163

Conference

GENOTOXICOLOGICAL AND MOLECULAR-GENETIC RESEARCH OF CORONAVIRUS IN ARMENIA

Tigran Harutyunyan, Anzhela Sargsyan, Nara Stepanyan, Galina Hovhannisyan, Lilit Ghoukasyan, Arsen Arakelyan, Rouben Aroutiounian

2023 7 - 7

https://indico.jinr.ru/event/3444/

Conference

ԳԵՆԵՏԻԿԱԿԱՆ ԱՆԿԱՅՈՒՆՈՒԹՅԱՆ ԿԵՆՍԱՄԱՐԿԵՐՆԵՐԻ ԿԻՐԱՌՈՒՄԸ ՄԻՋԻՆ ԵՎ ԾԱՆՐ ԸՆԹԱՑՔՈՎ COVID-19 ՀԻՎԱՆԴՆԵՐԻ ԽՄԲԵՐՈՒՄ

Հարությունյան Ռ., Հովհաննիսյան Գ., Սարգսյան Ա., Ստեփանյան Ն., Ղուկասյան Լ., Առաքելյան Ա., Հարությունյան Տ.

2023 39 - 39

https://www.ysu.am/conference/770

Article

Increase in the Level of Doxorubicin-Induced DNA Damage in HeLa Cells with CRISPR/Cas9 Mediated HIST1H1B Gene Knockout
E. T. Kuchukyan, A. A. Sargsyan, T. A. Harutyunyan

Physics of Particles and Nuclei Letters 2022 287-288

Article

Analysis and pharmacological modulation of senescence in human epithelial stem cells
Vanessa Barbaro, Antonio Orvieto, Gualtiero Alvisi, Marina Bertolin, Filippo Bonelli, Thomas Liehr,

Tigran Harutyunyan, Stefanie Kankel, Gordana Joksic, Stefano Ferrari, Elena Daniele, Diego Ponzin,

Daniela Bettio, Leonardo Salviati, Enzo Di Iorio

JOURNAL OF CELLULAR AND MOLECULAR MEDICINE 2022 3977-3994

Article

Can age related mosaic loss of Y chromosome really cause cardiac damage in men?
Tigran Harutyunyan, Thomas Liehr

Science, AAAS 2022 297

Article

Non-Invasive Prenatal Testing in Germany
Thomas Liehr, Tigran Harutyunyan, Heather Williams, Anja Weise

Diagnostics 2022 1-11

Conference

Genetic effects of ultrashort pulsed electron beam irradiation - 7 years of joint experience
Rouben Aroutiounian, Tigran Harutyunyan, Andrean Osipov, Natalya Vorobyeva, Galina Hovhannisyan,

Anzhela Sargsyan, Bagrat Grigoryan, Samvel Haroutiunian, Thomas Liehr, Nelly Babayan

2022 14

http://candle.am/uba22/

Conference

DOXORUBICIN-INDUCED MTDNA INSERTIONS IN NUCLEAR GENOME OF HUMAN LYMPHOCYTES
Aroutiounian R, Hovhannisyan G, Sargsyan A, Al-Rikabi A, Liehr T, Harutyunyan T

2021 44

https://indico.jinr.ru/event/1069/page/1034-second-announcement

---

Study manual

Cytogenomics: Approaches for studying epigenetic aspects of the human genome
Harutyunyan Tigran, Hovhannisyan Galina

2021 54

Article

IDENTIFICATION OF CYTOGENETICALLY VISIBLE mtDNA IN INTERPHASE NUCLEI OF HUMAN BLOOD LYMPHOCYTES EXPOSED TO DOXORUBICIN
T. A. HARUTYUNYAN, G. G. HOVHANNISYAN, A. A. SARGSYAN, T. LIEHR, A. AL-RIKABI,

R. M. AROUTIOUNIAN

Proceedings of the YSU B Chemical and Biological Sciences 2020 63-67

Article

Doxorubicin-induced translocation of mtDNA into the nuclear genome of human lymphocytes detected using a molecular-cytogenetic approach

Tigran Harutyunyan, Ahmed Al-Rikabi, Anzhela Sargsyan, Galina Hovhannisyan, Rouben Aroutiounian, Thomas Liehr

International Journal of Molecular Sciences 2020 1-11

Study manual

Մարդու գենետիկայի հիմունքները

Լիր Թոմաս, Հարությունյան Տիգրան, Հովհաննիսյան Գալինա

2020 170

Article

Analysis of copy number variations induced by ultrashort electron beam radiation in human leukocytes in vitro

Tigran Harutyunyan, Galina Hovhannisyan, Anzhela Sargsyan, Bagrat Grigoryan, Ahmed H. Al-Rikabi, Anja Weise, Thomas Liehr, Rouben Aroutiounian

Molecular Cytogenetics 2019 18 (1-6)

Article

DNA Copy Number Variations as Markers of Mutagenic Impact

Hovhannisyan Galina, Harutyunyan Tigran, Aroutiounian Rouben, Liehr Thomas

International Journal of Molecular Sciences 2019 1-19

Conference

Кинетика репарации ДНК и эпигенетические изменения при облучении сверхкороткими импульсами ускоренных электронов

Арутюнян Р.М., Оганесян Г.Г., Григорян Б.А., Арутюнян Т.А., Бабаян Н.С.

2019 16-19

http://www.jinr.ru/posts/radiatsionnaya-genetika-rezultaty-i-plany/

Article

Micronuclei and what they can tell us in cytogenetic diagnostics

Hovhannisyan Galina, Harutyunyan Tigran, Aroutiounian Rouben

Current Genetic Medicine Reports 2018 144-154

Conference

The genotoxic and cytotoxic effects of ochratoxin a and t-2 toxin in rats bone marrow and blood cells

Harutyunyan Tigran, Hovhannisyan Galina, Babayan Nelli, Arakelyan Arsen, Aroutiounian Rouben

2018 S28

http://ist2018.sci.am/index.php

Conference

Оценка повреждений и репарации ДНК при облучении сверхкороткими импульсами ускоренных электронов.

Арутюнян Р.М., Оганесян Г.Г.,, Григорян Б.А., Цаканова Г.В., Арутюнян С.Г., Арутюнян Т.А., Бабаян Н.С.

2018 16-18

http://www.jinr.ru/posts/mezhdunarodnaya-konferentsiya-problemy-himicheskoj-zas...

Article

Effect of Glutathione S-transferase mu 1 (GSTM1) gene polymorphismon chronic myeloid leukemia risk and Imatinib treatment response

Walid Al-Achkar, Faten Moassass, Rouben Aroutiounian, Tigran Harutyunyan, Thomas Liehr,

Abdulsamad Wafa

Meta Gene 2017 113-117

https://www.journals.elsevier.com/meta-gene/

Conference

Genetic effects: DNA radiation damage and repair

R. Aroutiounian, G. Hovhannisyan, B. Grigoryan, G. Tsakanova, S. Haroutiunian, T. Harutyunyan,

N. Babayan

2017 27

https://www.nato.int/cps/en/natohq/news_146445.htm

Study manual

Micronucleus FISH, Fluorescence In Situ Hybridization (FISH) Application Guide, Second Edition

Galina Hovhannisyan, Tigran Harutyunyan, Thomas Liehr

2017 379-383

Article

Interphase Molecular Cytogenetic Detection Rates of Chronic Lymphocytic Leukemia–Specific Aberrations Are Higher in Cultivated Cells Than in Blood or Bone Marrow Smears

Eyad Alhourani, Rouben Aroutiounian, Tigran Harutyunyan, Anita Glaser, Cordula Schlie, Beate Pohle,

Thomas Liehr

Journal of Histochemistry & Cytochemistry 2016 495-501

http://jhc.sagepub.com/

Article

Comparative analysis of individual chromosome involvement in micronuclei induced by mitomycin C and bleomycin in human leukocytes.

Hovhannisyan G, Aroutiounian R, Babayan N, Harutyunyan T, Liehr T

Molecular Cytogenetics 2016 7

https://molecularcytogenetics.biomedcentral.com/

Article

Cell viability and DNA damage in MRC5 and HeLa cell lines after histone H1 knockout by CRISPR-Cas9 genome editing technology

Hovhannisyan G, Aroutiounian R, Harutyunyan T, Babayan N

Proceedings of the YSU B Chemical and Biological Sciences 2016 64–66

http://www.ysu.am/science/hy/journals

Conference

PROTECTIVE EFFECTS OF SCHIFF BASE CYCLIC AMINO ACID DERIVATIVES AGAINST MYCOTOXINS GENO- AND CYTOTOXICITY

Tigran HARUTYUNYAN, Galina HOVHANNISYAN, Nelli BABAYAN, Thomas LIEHR, Arsen ARAKELYAN,

Rouben AROUTIOUNIAN, Margarita MALAKYAN

2016 64

http://jsmyco.org/ismyco2016/

Article

Influence of aflatoxin B1 on copy number variants in human leukocytes in vitro.
Harutyunyan T, Hovhannisyan G, Babayan N, Othman MA, Liehr T, Aroutiounian R

Molecular Cytogenetics 2015 25; 5

https://molecularcytogenetics.biomedcentral.com/

Article

APOPTOSIS-INDUCING EFFECT OF AFLATOXIN B1, OCHRATOXIN A AND ZEARALENONE COMBINATION IN RAT HEPATOCYTES

T A Harutyunyan

Proceedings of the YSU B Chemical and Biological Sciences 2015 50-52

http://www.ysu.am/science/hy/journals

Article

Influence of Glutathione S-transferase (GSTT1 and GSTM1) gene polymorphism on imatinib failure in chronic myeloid leukemia patients
Al Achkar W, Moassass F, Aroutiounian R, Harutyunyan T, Liehr T, Wafa A

Российский вестник перинатологии и педиатрии (Russian Bulletin of Perinatology and Pediatrics) 2015 174

http://www.ped-perinatology.ru/jour

Conference

ЭКОГЕНОТОКСИКОЛОГИЧЕСКОЕ ИССЛЕДОВАНИЕ БАССЕЙНА ОЗЕРА СЕВАН С ПРИМЕНЕНИЕМ РЕЧНЫХ РАКОВ (ASTACUS LEPTODACTYLUS) И ТРАДЕСКАНЦИИ
А.Э. Симонян, Г.Г. Оганесян, Т.А. Арутюнян, А.Л. Геворкян, Р.М. Арутюнян, Б.К. Габриелян,

С.Г. МИНАСЯН

2015 168-176

http://www.ssc-ras.ru/ru/conferences/vserossiiskaja_konferencija/

Conference

Изучение мутагенеза методами молекулярной цитогенетики.
Арутюнян Р.М., Арутюнян Т.А., Симонян А.Э., Оганесян Г.Г.

2015 4-5

http://bionanomed.sfedu.ru/ru/program

Article

LEVELS OF DNA DAMAGE IN CRAYFISH HEMOCYTES
Simonyan AE, Harutyunyan TA, Gevorgyan AL, Tadevosyan EH, Gabrielyan BK, Badalyan NS,

Aroutiounian RM

Proceedings of the YSU B Chemical and Biological Sciences 2014 58-60

http://www.ysu.am/science/hy/journals

Article

Combined Genotoxic Effects of Aflatoxin B1, Ochratoxin A and Zearalenone in Rat Bone Marrow and Blood Leukocytes
Harutyunyan Tigran, Karapetyan Anna, Hovhannisyan Galina, Aroutiounian Rouben

Korean Journal of Environmental Biology 2013 189-191

http://www.ebr.or.kr/AboutUs/01.php

Conference

New doxorubicin nanosize composites' anticancer activity in vitro and in vivo
Babayan N, Harutyunyan T, Apresyan L, Grigoryan S, Arakelova E

2013 45-46

Conference

Investigation of genotoxic effects of mycotoxins in vivo
Harutyunyan T, Aroutiounian R, Karapetyan A

2012 110-114