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1978-1983	Биологический факультет Ереванского государственного университета
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1990	Кандидат биологических наук - “Изучение антикластогенов при действии химических мутагенов в клетках больных аллергозом и здоровых доноров”, ЕГУ
2013	Доктор биологических наук – “Локализация повреждений ДНК и хромосом в клетках человека”, ЕГУ
2017	Профессор
	Опыт работы
1983 - 1985	Лаборант, Институт общей гигиены и профессиональных заболеваний
1985-1994	Научный сотрудник, Ереванский государственный медицинский университет, Национальный институт здравоохранения
1994-2021	Старший научный сотрудник, НИИ Биологии, Ереванский государственный университет
2021 - present	Ведущий научный сотрудник, НИИ Биологии, Ереванский государственный университет
2000 -2009	Ассистент кафедры генетики и цитологии биологического факультета ЕГУ
2009 - 2017	Доцент кафедры генетики и цитологии биологического факультета ЕГУ
2017-present	Профессор кафедры генетики и цитологии биологического факультета ЕГУ
2017-present	Профессор, Российско-Армянский университет
	Область научных интересов
	Генетическая токсикология, экогенетика, мутагенез, антимутагенез, молекулярная цитогенетика
	Преподаваемые предметы
	Эпигенетика, Генетическая токсикология, Молекулярная цитогенетика, Геномика и молекулярная медицина, Генетический анализ, Генетика поведения, Фармакогенетика
	Гранты
2006-2007	DAAD
2007-2008	DFG

2009	DLR/BMBF
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2013-2014	MES-BMBF
2014-2015	DAAD
2016-2017	ANSEF (molbio-4235)
2017-2020	SCS-BMBF, Создание армяно-германской совместной исследовательской лаборатории для разработки исследовательских и образовательных программ в области молекулярной цитогенетики в Армении.
2018-2020	Министерство образования, науки, культуры и спорта РА, Комитет по науке (18T-1F039), Разработка технологии редактирования генома CRISPR-Cas9 для сенсibilизации раковых клеток к противоопухолевым препаратам
2020-2026	Министерство образования, науки, культуры и спорта РА, Комитет по науке, (21AG-1F068), Разработка новых генетических маркеров инфекции COVID-19 и регуляция SARS-CoV-2-индуцированной геномной нестабильности
2024-2026	SCS-BMBF (22SC-BMBF-1C001) Оценка потенциального применения облучения ультракоротким импульсным электронным пучком в лучевой терапии рака с использованием генетических маркеров.

List of publications (2016-2026)

Articles

1. Simonyan A, Gabrielyan B, Minasyan S, Hovhannisyan G, Aroutiounian R. Genotoxicity of Water Contaminants from the Basin of Lake Sevan, Armenia Evaluated by the Comet Assay in Gibel Carp (*Carassius auratus gibelio*) and *Tradescantia* Bioassays. *Bull Environ Contam Toxicol.* 2016 Mar;96(3):309-13. doi: 10.1007/s00128-015-1720-4. Epub 2016 Jan 7. PubMed PMID: 26739952.
2. Hovhannisyan G, Aroutiounian R, Babayan N, Harutyunyan T, Liehr T. Comparative analysis of individual chromosome involvement in micronuclei induced by mitomycin C and bleomycin in human leukocytes. *Mol Cytogenet.* 2016 Jun 21;9:49. doi: 10.1186/s13039-016-0258-4. eCollection 2016. PubMed PMID: 27330564; PubMed Central PMCID: PMC4915088.
3. Harutyunyan T, Babayan N, Aroutiounian R, Hovhannisyan G. Cell viability and DNA damage in MRC5 and HeLa cell lines after histone H1 knockout by CRISPR-Cas9 genome editing technology. *PROCEEDINGS OF THE YEREVAN STATE UNIVERSITY, Chemistry and Biology* 2016, № 3, p. 64–66
4. Babayan N, Hovhannisyan G, Grigoryan B, Grigoryan R, Sarkisyan N, Tsakanova G, Haroutiounian S, Aroutiounian R. Dose-rate effect of ultrashort electron beam radiation on DNA damage and repair in vitro. *J Radiat Res.* 2017 Nov 1;58(6):894-897. doi: 10.1093/jrr/rrx035. PubMed PMID: 28992052; PubMed Central PMCID: PMC5737585.
5. Hovhannisyan G, Harutyunyan T, Liehr T. PART V. INTERPHASE FISH. *Micronucleus FISH*, p. 379-385. *Fluorescence in situ Hybridization (FISH) – Application Guide*, T. Liehr (Editor), 2nd Ed., Springer, Berlin, 2017, ISBN: 978-3662529577.

6. Hovhannisyan G, Aroutiounian R PART V. INTERPHASE FISH. Comet-FISH, p. 373-37. Fluorescence in situ Hybridization (FISH) – Application Guide, T. Liehr (Editor), 2nd Ed., Springer, Berlin, 2017, ISBN: 978-3662529577.
7. Simonyan A, Hovhannisyan G, Sargsyan A, Arakelyan M, Minasyan S, Aroutiounian R. DNA damage and micronuclei in parthenogenetic and bisexual Darevskia rock lizards from the areas with different levels of soil pollution. *Ecotoxicol Environ Saf.* 2018 Jun 15;154:13-18. doi: 10.1016/j.ecoenv.2018.02.025. Epub 2018 Feb 22. PubMed PMID: 29453160.
8. Hovhannisyan, G., Harutyunyan, T. & Aroutiounian, R. Micronuclei and What They Can Tell Us in Cytogenetic Diagnostics. *Curr Genet Med Rep* (2018) 6: 144. <https://doi.org/10.1007/s40142-018-0149-6>
9. Simonyan A.E., Sargsyan A.A., Hovhannisyan G.G., Badalyan N.S. , Minasyan S.H. Application of Crayfish *Astacus Leptodactylus* for the Analysis of Water Genotoxicity in the Lake Sevan Basin. *J. Water Chem. Technol.* (2018) 40: 367–369.
10. Babayan N, Grigoryan B, Hovhannisyan G, Tadevosyan G, Khondkaryan L, Grigoryan R, Sarkisyan N, Aroutiounian R. Gender differences in DNA damage/repair after laser-generated ultrafast electron beam irradiation. *International Journal of Radiology & Radiation Therapy*, 2018, Volume 5 Issue 2, p 85-86.
11. Harutyunyan T, Hovhannisyan G, Sargsyan A, et al. Analysis of copy number variations induced by ultrashort electron beam radiation in human leukocytes in vitro. *Mol Cytogenet.* 2019;12:18. Published 2019 May 16. doi:10.1186/s13039-019-0433-5
12. Harutyunyan T, Hovhannisyan G, Sargsyan A, et al. Analysis of copy number variations induced by ultrashort electron beam radiation in human leukocytes in vitro. *Mol Cytogenet.* 2019;12:18. Published 2019 May 16. doi:10.1186/s13039-019-0433-5
13. Sargsyan A, Simonyan A, Hovhannisyan G, Arakelyan M, Aroutiounian R. Application of the comet assay, micronucleus test and global DNA methylation analysis in Darevskia lizards as a sentinel organism for genotoxic monitoring of soil pollution. *Mutat Res.* 2019 Jun;842:117-124. doi: 10.1016/j.mrgentox.2018.10.005. Epub 2018 Oct 25. PubMed PMID: 31255219.
14. Hovhannisyan G, Harutyunyan T, Aroutiounian R, Liehr T. DNA Copy Number Variations as Markers of Mutagenic Impact. *Int J Mol Sci.* 2019;20(19):4723. Published 2019 Sep 24. doi:10.3390/ijms20194723
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16. Harutyunyan T, Al-Rikabi A, Sargsyan A, Hovhannisyan G, Aroutiounian R, Liehr T. Doxorubicin-Induced Translocation of mtDNA into the Nuclear Genome of Human Lymphocytes Detected Using a Molecular-Cytogenetic Approach. *Int J Mol Sci.* 2020 Oct 17;21(20):7690. doi: 10.3390/ijms21207690. PMID: 33080837; PMCID: PMC7589397.
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18. Tigran Harutyunyan, Galina Hovhannisyan, Chapter 10 - Approaches for studying epigenetic aspects of the human genome, Editor(s): Thomas Liehr, Cytogenomics, Academic Press, 2021, Pages 155-209, ISBN 9780128235799 <https://doi.org/10.1016/B978-0-12-823579-9.00008-4>.
19. Hovhannisyan G, Harutyunyan T, Aroutiounian R, Liehr T. The Diagnostic, Prognostic, and Therapeutic Potential of Cell-Free DNA with a Special Focus on COVID-19 and Other Viral Infections. *Int J Mol Sci.* 2023 Sep 15;24(18):14163. doi: 10.3390/ijms241814163. PMID: 37762464; PMCID: PMC10532175.
20. Galina Hovhannisyan, Tigran Harutyunyan, Rouben Aroutiounian Chapter 20 FISH—and Single-Cell Gel Electrophoresis Assay (Comet Assay), Edited by Thomas Liehr. *Cytogenetics and Molecular Cytogenetics*, Copyright Year 2023, ISBN 9781032121628, December 7, 2022 Forthcoming by CRC Press, 382 Pages 40 <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003223658-20/fish%E2%80%94and-single-cell-gel-electrophoresis-assay-comet-assay-galina-hovhannisyan-tigran-harutyunyan-rouben-aroutiounian?context=ubx&refId=2f45a98b-620b-46d3-bf39-53533d010978>
21. Harutyunyan T, Sargsyan A, Kalashyan L, Igityan H, Grigoryan B, Davtyan H, Aroutiounian R, Liehr T, Hovhannisyan G. Changes in Telomere Length in Leukocytes and Leukemic Cells after Ultrashort Electron Beam Radiation. *International Journal of Molecular Sciences.* 2024; 25(12):6709. <https://doi.org/10.3390/ijms25126709>
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23. Harutyunyan T, Sargsyan A, Kalashyan L, Stepanyan N, Aroutiounian R, Liehr T, Hovhannisyan G. DNA Damage in Moderate and Severe COVID-19 Cases: Relation to Demographic, Clinical, and Laboratory Parameters. *Int J Mol Sci.* 2024 Sep 24;25(19):10293. doi: 10.3390/ijms251910293. PMID: 39408623; PMCID: PMC11476890.
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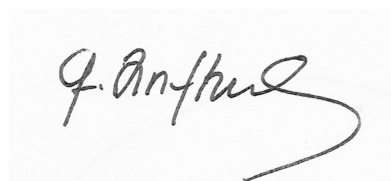
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1. Harutyunyan T, Hovhannisyan G, Babayan N, Malakyan M, Liehr T, Aroutiounian R. Protective effects of schiff base cyclic amino acid derivatives against mycotoxins geno- and cytotoxicity. *International Symposium of Mycotoxicology*, Tokyo November 30th – December 3rd, 2016 The University of Tokyo, Yayoi Auditorium, YS09, p 72.
2. Aroutiounian R, Hovhannisyan G, Simonyan A. Genetic damage in bioindicator organisms and heavy metal content in ecogenotoxic studies. *The 6th International Conference Ecological and Environmental Chemistry*, Chisinau, Republic of Moldova, 2017, March 2-3, 2017, p 52,
3. The 6th International Conference ECOLOGICAL & ENVIRONMENTAL CHEMISTRY 2017 (EEC-2017) will be held in Chisinau, Republic of Moldova on March 2–3, 2017.
4. Aroutiounian R, Hovhannisyan G, Grigoryan B, Grigoryan R, Tsakanova G, Haroutiounian S, Harutyunyan T, Babayan N. Genetic effects: DNA radiation damage and repair. *Advanced*

Research Workshop BRITE (Biomarkers of Radiation in The Environment): Robust Tools for Risk Assessment. 28 Nov. 2017 - 30 Nov. 2017. Yerevan, Armenia, p 27.

5. Арутюнян Р.М., Оганесян Г.Г., Григорян Б.А., Цаканова Г.В., Арутюнян С.Г., Арутюнян Т.А., Бабаян Н.С. Оценка повреждений и репарации днк при облучении сверхкороткими импульсами ускоренных электронов. «Проблемы химической защиты и репарации при радиационных воздействиях» Дубна, 30-31 мая 2018, стр 16-18.
6. Harutyunyan T., Hovhannisyan G., Babayan N., Arakelyan A., Aroutiounian R. The genotoxic and cytotoxic effects of ochratoxin A and T-2 toxin in rats bone marrow and blood cells. Proceedings of the 19th World Congress of the International Society on Toxinology. Toxicon. 2019; v. 159, S28.
7. Арутюнян Р.М., Оганесян Г.Г., Григорян Б.А., Арутюнян Т.А., Бабаян Н.С. Кинетика репарации ДНК и эпигенетические изменения при облучении сверхкороткими импульсами ускоренных электронов. Российская конференция с международным участием «Современные вопросы радиационной генетики» Дубна, 27-28 июня 2019, стр 16-19.
8. Sargsyan A, Simonyan A, Hovhannisyan G, Gabrielyan B, Aroutiounian R (2021) Assessment of aquatic genotoxicity of the Lake Sevan basin, Armenia using natural bioindicators. ARPHA Conference Abstracts 4: e64826.
9. Aroutiounian R, Hovhannisyan G, Sargsyan A, Al-Rikabi A, Liehr T, Harutyunyan T. Doxorubicin-induced mtDNA insertions in nuclear genome of human lymphocytes. Fifth International conference, dedicated to N. W. Timofeeff-Ressovsky and his scientific school “Modern Problems of Genetics, Radiobiology, Radioecology, and Evolution”, Armenia, Nor Amberd, 05.10.2021 – 10.09.2021, p.44.
10. Sargsyan A, Hovhannisyan G, Simonyan A, Arakelyan M, Minasyan S, Aroutiounian R. Application of bioindicators for assessment of heavy metals’ genetic and epigenetic effects in different regions of Armenia, Fifth International Conference, Dedicated to N.W. Timofeeff-Ressovsky and His Scientific School “Modern Problems of Genetics, Radiobiology, Radioecology, and Evolution”, Armenia, Nor Amberd, 05.10.2021 – 10.09.2021, p. 26.
11. Aroutiounian R, Harutyunyan T, Osipov A, Vorobyeva N, Hovhannisyan G, Sargsyan A, Grigoryan B, Haroutiunian S, Liehr T, Babayan N. The 3rd International Workshop on “Genetic effects of ultrashort pulsed electron beam irradiation – 7 years of joint experience”, Ultrafast Beams and Applications, CANDLE, Yerevan, Armenia, 04-08 July 2022, p14.
12. Aroutiounian R.M., Hovhannisyan G.G., Babayan N.S., Manukyan A.T., Sargsyan A.A., Grigoryan B.A., Liehr T., Osipov A.N., Vorobyova N.Y., Harutyunyan T.A. Application of markers of genomic instability for evaluation of radiation effects in human cells. The 4th International Workshop on “Ultrafast Beams and Applications”, 17-23 June 2024, Yerevan, Armenia.
13. Tigran Harutyunyan, Galina Hovhannisyan, Rouben Aroutiounian. Genomic markers of viral-host conflict and adaptation in COVID-19 patients. The Evolution of complexity and statistical physics, July 1 - 4, 2024 Yerevan, Armenia

14. Anzhela Sargsyan, Anna Simonyan, Galina Hovhannisyan, Marine Arakelyan, Rouben Aroutiounian. Evolution and environmental pollution. The Evolution of complexity and statistical physics, July 1 – July 4, 2024, Yerevan, Armenia.
15. Aroutiounian RA, Hovhannisyan GG, Avalyan RE, Atoyanc AL, Gabrielyan BK, Sargsyan AA. Application of water genotoxicity biomarkers in Lake Sevan. The International Conference on Biodiversity, Conservation, and Climate Change, 5-8 May 2025, Yerevan, Armenia, p 7.
16. Rouben Aroutiounian, Anzhela Sargsyan and Galina Hovhannisyan Application of Modern Genetic Biomarkers in Environmental Monitoring. The II Congress of Scientific Councils of the International Association of Academies of Sciences, June 3-7, 2025, Jinan City, page 11.
17. Aroutiounian R.M., Hovhannisyan G.G., Babayan N. S., Sargsyan A.A., Grigoryan B.A., Liehr T., Harutyunyan T.A. Genotoxic effects of low LET irradiation by electron pulses in human cells. The “Low dose radiation risks: present research and future perspectives” Advanced Research Workshop, NATO, 30 March 30th – April 2nd, 2025, Yerevan, Armenia, p. 19
18. Kalashyan L.A., Sargsyan A.A., Grigoryan B.A., Davtyan H.D., Aroutiounian R.M., Liehr T., Hovhannisyan G.G., Harutyunyan T.A. Telomere Lengths of Human Chromosomes as Potential Biomarkers of Genomic Instability Induced by Electron Beam Radiation. The “Low dose radiation risks: present research and future perspectives” Advanced Research Workshop, NATO, 30 March 30th – April 2nd, 2025, Yerevan, Armenia, p. 41.
19. Aroutiounian RM, Hovhannisyan GG, Avalyan RE, Atoyants AL, Gabrielyan BK, Sargsyan AA. Application of water genotoxicity biomarkers in Lake Sevan. International conference on biodiversity, conservation, and climate change, 5-8 May 2025, Yerevan, Armenia, p 7.



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