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EDUCATION

1989 January	Ph.D. in Biophysics,Andronikashvili Institute of Physics, Tbilisi, Georgia
1974-1979	IvaneJavakhishvili Tbilisi State University,Faculty of Physics, MSc (Biophysics)

RESEARCH AREA

- Genetic identification of bacteria and viruses using biochips for medical and ecological diagnostics.
- Structure and composition of transcriptionally active and inactive chromatin.
- Intracellular and extracellular functions of nonhistone nuclear proteins HMGB1 and HMGA2.
- Genetic instability and defense mechanisms against heavy metals.
- Search biomarkers of inflammatory processes accompanied ischemic stroke.

GRANTS COMPLETED:

- STCU-SRNSF grant #6306 (2017-2019) “DNA diagnostic technology for identification of GM crops” (*Participating institution manager*)
- STCU-SRNSF grant #6304 (2017-2019) “Development of Quick Response Strategy against Chemical Pollution of Soils by Using Biochips and Biosorbents” (*Expert in biochip*).
- CONTRACT #6600028240 FOR RESEARCH AND DEVELOPMENT from SAUDI ARAMCO OIL COMPANY (2012-2015) “Biochips as tools for rapid detection and enumeration of oilfield microorganisms” (*Project manager*)
- ISTC grant G-1761p (2010-2012) “Manufacture of biochips for diagnosis of viral and bacterial diseases” (*Project manager*) (Department of Energy and Climate Change (DECC) of the United Kingdom of Great Britain and Northern Ireland)
- STCU-GNSF grant #5012 (2009-2011) “Study of the antioxidant system status and blood metalloproteinases cross influence at acute ischemic stroke” (*Project manager*) (E.O. Lawrence Berkeley National Laboratory (LBNL,Berkeley, USA)
- STCU grant #4330 (2007-2009) “Heavy Metals Detoxification by Basalt Inhabitant Bacteria” (*Experimental Investigator*) (LBNL, Berkeley, USA)
- CRDF-GE-B2-2597-TB-03 (2004-2006) “Mechanisms of Microbial reduction and Detoxification of Heavy Metal Ions”, (*Experimental Investigator*) (LBNL, Berkeley, USA)
- ISTC Grant G-349 (2001-2003) “ In vitro Study of Mechanisms of Intracellular Responses to Low-Dose and Low-Dose rate Exposure to Cr(VI) Compounds” (*Project manager*)(LBNL, Berkeley,USA)
- ISTC grant G-348 (2000-2002) “Heavy Metal Transformation on Microbial-Mineral Surfaces” (LBNL,Berkeley, USA) (*Leading expert in molecular biology*)
- Wellcome Trust International Research Developmental Grant N 052144/Z/97/Z (University of Portsmouth, UK) (1997-2000) “Mapping of HMG1 chromatin protein”
- INTAS-94-0280 (1994-1996) “Structure and function of the chromosomal activator protein HMG1”

RESEARCH/WORK EXPERIENCE

2010- present	Principal Investigator, I.Javakhishvili Tbilisi State University, Andronikashvili Institute of Physics, Tbilisi, Georgia
2001-2010	Senior Researcher, Andronikashvili Institute of Physics, Tbilisi, Georgia
2000-2001	Research associate, University of Portsmouth, UK
1999-2000	Senior Researcher, Andronikashvili Institute of Physics, Tbilisi, Georgia

1985-1999	Researcher, Andronikashvili Institute of Physics, Tbilisi, Georgia
1984-1985	Post-graduate Researcher, Institute of Cytology, St. Petersburg, Russia
1979-1984	Post-graduate Researcher, Andronikashvili Institute of Physics, Tbilisi, Georgia

AWARDS AND HONORS:

- UK Biochemical Society Visiting Fellowship (2014). Title of project: Role of Variant Histone H2A.Z in Re-programming Fibroblasts into Pluripotent Stem Cells (University of Portsmouth, UK).

- Austrian Academy of Sciences Travel Grant (1999) (Institute of Medical Chemistry and Biochemistry, University of Innsbruck, Austria)

Society memberships:

2007-2020 Member of the Scientific Board of Andronikashvili Institute of Physics, I.Javakhishvili Tbilisi State University

1985-1989 Scientific Secretary of the Physical Biological Problems Board of the Institute of Physics

Mentorships:

1. *2018 (April)* External Examiner for the Ph.D. thesis “Microbial Factories for Bio-based Chemicals: Production of Biopolymers from Environmental Bacteria” at the University of Portsmouth, UK, Ph.D. DegreeRegistered Programme.

2. *2016 (19-23 June)*Biochip Technology training and implementation ofcourses *for* SAUDI ARAMCO company employees, Applied Microbiology Unit, Research & Development Center, Saudi Aramco, Dhahran, Saudi Arabia).

3. *2014 (9-13 June)*Summer School “Current Advances in Biochip Technology” *for* PhD students from the School of Pharmacy and Biomedical Sciences of the University of Portsmouth, UK. http://www.tsu.edu.ge/ge/government/administration/departments/pr/announcement/Mf4kCw6J0hpGZxQmF

4. *2007-2008* Postgraduate Programs in Molecular Cell Biology (I. JavakhishviliTbilisi State University, Faculty of Exact and Natural Sciences).

5. *2005* Supervision of Master Thesis of T. Japaridze (Faculty of Natural Sciences, I. Javakhishvili Tbilisi State University)

TECHNICAL SKILLS:

1. Low density microarrays for bacterial and viral identification
2. Oligonucleotide probe design for microarray
3. ChIP (Chromatin Immunoprecipitation)
4. RT-PCR
5. Multiplex PCR
6. DNA isolation, purification and electrophoretic characterization
7. Protein expression, isolation, purification and electrophoretic characterization
8. Protein characterization - western blotting
9. Enzyme-in gel assay activity
10. ELISA
11. Comet assay
12. Bacterial culture
13. Eukaryotic cell culture
14. Circular dichroism (CD)

PARTICIPATION IN INTERNATIONAL CONFERENCES:

1. 1st GHI World Congress on Food Safety and Security, 24-28 March, 2019, Leiden, The Netherlands.
2. 5th International Conference “Nanotechnologies”, 19-22 November, 2018, Tbilisi, Georgia.
3. International conference „Innovations in Food Analytics“, 19-21 September 2018, Munich, Germany.
4. 6th International Symposium on Biosorption and Biodegradation/Bioremediation, June 25-29, 2017, Prague, Czech Republic.
5. The First SDSU-Georgia STEM WORKSHOP on Nanotechnology and Environmental Sciences, 5 September, 2015, Tbilisi, Georgia.
6. International Conference on Nanotechnology in Medicine, Nano-Med-2012, 7-9November, 2012, London, UK.
7. 21st European Stroke Conference, Lisbon, Portugal, May 22-25, 2012.
8. Workshop “Biomedical Science and Engineering”, 20-22 December, 2011, Shanghai, China.
9. Environmental Forensics, Tbilisi, Georgia, September 12-16, 2011.
10. 36th FEBS Congress “Biochemistry for Tomorrow’s Medicine”, Torino, Italy, June 25-30, 2011.
11. 20th European Stroke Conference, Hamburg, Germany, May 24-27, 2011.
12. The Matchmaking Event, 1-2 December, 2010, Lappeenranta, Finland.
13. Health Technology Seminar, 12 – 14 October, 2010, Tbilisi, Georgia.
14. The Wilhelm Bernhard Workshop, 21st International Workshop on the Cell Nucleus, 31 August – 4 September 2009, Ustron, Poland.

15. Keystone Symposia on Chromatin Dynamics and Higher Order Organization, 25 February – 2 March 2009, Coeur d'Alene, Idaho, USA.
16. 10th International Symposium on Metal Ions in Biology and Medicine, May 19-22 2008, Bastia, Corsica, France.
17. Keystone Symposia on Molecular and Cellular Biology: Regulatory Mechanisms in Eukaryotic Transcription, February 3-8, 2008, Keystone, Colorado, USA.
18. Keystone Symposia on Molecular and Cellular Biology: Epigenetics: Regulation of Chromatin Structure in Development and Disease, April 11-16, 2007, Breckenridge, Colorado, USA.
19. International Conference "Protection and Restoration of the Environment VIII" Chania, Greece, July 2006.
20. 12th TENOVUS – SCOTLAND Symposium, Stability and Regulation of Genes and Genomes, Glasgow, April 2006.
21. The 3rd Berkeley-Stanford Summer School on Synchrotron Radiation and its Application, June 2003, Berkeley, USA.
22. 12th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, October 4-8, Antalya, Turkey, 2003.
23. 28th Meeting of the Federation of European Biochemical Societies (FEBS), Istanbul, Turkey, October 20-25, 2002.
24. International Conference "Protection and Restoration of the Environment VI", Skiathos, Greece, July 1-5, 2002.
25. 11th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, October 6-10, 2001, Limassol, Cyprus.
26. 4th International Conference on Water and Ions in Biological Systems, May 24-28, 1987, Bucharest, Romania.
27. International Symposium «Physico-Chemistry of DNA and Molecular Mechanisms of Genome Functioning». Tbilisi, August 1987.

PUBLICATIONS (68); H-INDEX: 11; I-INDEX: 12

Selected Publication List:

1. Datukishvili, N., Kutateladze, T., Gabriadze, I., Vishnepolsky, B., Bitskinashvili, K., Karseladze M., Kartvelishvili, T., Asatiani, N., Sapojnikova, N. "DNA-based multiplex technologies for identification of genetically modified foods". 1st GHI World Congress on Food Safety and Security, 24-28 March, 2019, Leiden, The Netherlands, Abstract book, p. 102, https://ghiworldcongress.org/wp-content/uploads/2019/04/Abstract_Book-2.pdf
2. A. A. Al-Humam, V. Zinkevich, N. Sapojnikova, T. Kartvelishvili, N. Asatiani. USA patent 15/949,400 "Biochips and rapid methods for detecting organisms involved in microbially influenced corrosion (MIC)"(2018)http://www.freepatentsonline.com/20180298429.pdf
3. Nino Asatiani, Tamar Kartvelishvili, Nelly Sapojnikova, Marina Abuladze, LaliAsanishvili, Mariam Osepashvili. "Effect of the Simultaneous Action of Zinc

and Chromium on Arthrobacter spp.", Water, Air and Soil Pollution 229, 395 (2018) https://doi.org/10.1007/s11270-018-4046-0

4. N. Sapojnikova, N. Asatiani, T. Kartvelishvili, L. Asanishvili, V. Zinkevich, I. Bogdarina, J.Mitchell, A.Al-Humam. "A comparison of DNA fragmentation methods − Applications for the biochip technology", J. Biotechnology 256, 1-5 (2017)http://www.sciencedirect.com/science/article/pii/S0168165617314980
5. N. Sapojnikova, T. Kartvelishvili, N. Asatiani, V. Zinkevich, I. Kalandadze, D. Gugutsidze, R. Shakarishvili, A. Tsiskaridze. "Correlation between MMP-9 and extracellular cytokine HMGB1 in prediction of human ischemic stroke outcome", BBA-Molecular Basis of Disease 1842, 1379-1384 (2014)http://www.sciencedirect.com/science/article/pii/S0925443914001264?via%3Dihub
6. V. Zinkevich, N. Sapojnikova, J. Mitchell, T. Kartvelishvili, N. Asatiani, S. Alkhalil, I. Bogdarina, A. Al-Humam. "A novel cassette method for probe evaluation in the designed biochips". PLOS ONE 9, e98596. (2014) http://dx.doi.org/10.1371/journal.pone.0098596
7. N. Sapojnikova, N. Asatiani, T. Kartvelishvili, T. Vashadze, R. Shakarishvili, I. Kalandadze, A. Tsiskaridze. "MMP-9, antioxidant defense system and extracellular cytokine HMGB1 as predictors of acute ischemic stroke outcome", Cerebrovasc Dis 33 (suppl 2); 418-419 (2012)
8. Nelly Sapojnikova, Nino Asatiani, Tamar Kartvelishvili, IagorKalandadze and Alexander Tsiskaridze. "Plasma Antioxidant Activity as a Marker for a Favourable Outcome in Acute Ischemic Stroke". Invited Chapter in Collected Book "Antioxidant Enzyme" (Ed. M. Amr El-Missiry), ISBN 978-953-51-0789-7; INTECH Publisher, Open access, 2012, Chapter 6, pp. 141-168. http://www.intechopen.com/articles/show/title/plasma-antioxidant-activity-as-a-marker-for-a-favourable-outcome-in-acute-ischemic-stroke
9. T. Kartvelishvili, N. Asatiani, N. Sapojnikova, L. Asanishvili, I. Kalandadze, A. Tsikaridze. "Temporal profile of oxidant/antioxidant balance in plasma at acute ischemic stroke" The FEBS Journal,v.278, Supplement S1, p.265 (2011)
10. N. Asatiani, T. Kartvelishvili, M. Abuladze, L. Asanishvili, N. Sapojnikova. "Chromium (VI) can activate and impair antioxidant defense system", Biol. Trace Elem. Res. 142, 388-397 (2011)https://doi.org/10.1007/s12011-010-8806-y
11. A. Trollope, N. Sapojnikova, A.W. Thorne, C. Crane-Robinson, F.A. Myers. "Linker histone subtypes are not generalized gene repressors", Biochim. Biophys. Acta, 1799, 642-652 (2010) https://doi.org/10.1016/j.bbagrm.2010.08.007
12. N. Asatani, M. Abuladze, T. Kartvelishvili, N. Kulikova, L. Asanishvili, H-Y. Holman, N. Sapojnikova. "Response of antioxidant defence system to chromium

(VI)-induced cytotoxicity in human diploid cells", Biometals, 23, 161-172 (2010)https://doi.org/10.1007/s10534-009-9276-6

13. N. Sapojnikova, A. Thorne, F. Myers, D. Staynov, C. Crane-Robinson. "The chromatin of active genes is not in a permanently open conformation", J. Mol. Biology, 386, 290-299 (2009) http://www.sciencedirect.com/science/article/pii/S0022283608015684?via%3Dihub
14. N. Sapojnikova, T. Kartvelishvili, M. Abuladze, N. Asatiani. "How a Cell Defends Itself against Genomic Instability Caused by Chromium". Invited Chapter in Collected Book "New Research on Genomic Instability" (Ed. E. Gloscow), NOVA SCIENCE Publisher, New York, 2007, pp. 204-260. www.novapublisher.com
15. J. Monaselidze, M. Abuladze, N. Asatiani, E. Kiziria, Sh. Barbakadze, G. Majagaladze, M. Iobadze, L. Tabatadze, H-Y. Holman, N. Sapojnikova. "Characterization of Chromium-Induced Apoptosis in Cultured Mammalian Cells: A Differential Scanning Calorimetry Study". Thermochim. Acta, 441, 8-15 (2006) https://doi.org/10.1016/j.tca.2005.11.025
16. N. Sapojnikova, J. Maman, F. Myers, A. Thorne, V. Vorobyev, C. Crane-Robinson. "Biochemical Observation of the Rapid Mobility of Nuclear HMGB1". Biochem. Biophys. Acta, 1729, 57-63 (2005) https://doi.org/10.1016/j.bbaexp.2005.03.002
17. N. Asatiani, M. Abuladze, T. Kartvelishvili, N. Bakradze, N. Sapojnikova, N. Tsibakhashvili, L. Tabatadze, L. Lejava, L. Asanishvili, H-Y. Holman. "Effect of Chromium (VI) Action on Arthrobacteroxydans". Current Microbiology, 49, 321-326 (2004) https://doi.org/10.1007/s00284-004-4351-2
18. T. Kartvelishvili, M. Abuladze, N. Asatiani, J. Akhvlediani, E. Kiziria, L. Asanishvili, L. Lejava, H-Y. Holman, N. Sapojnikova. "Estimation of the Cellular Antioxidant Response to Chromium Action using ESR Method". TheScientificWorldJOURNAL, 4, 785-794 (2004) http://dx.doi.org/10.1100/tsw.2004.136
19. T. Kartvelishvili, M. Abuladze, N. Asatiani, J. Akhvlediani, L. Asanishvili, H-Y. Holman, N. Sapojnikova. "Antioxidant Capacity of Cultured Mammalian Cells Estimated by ESR Method". TheScientificWorldJOURNAL, 4, 490-499 (2004) http://dx.doi.org/10.1100/tsw.2004.99
20. N.V. Asatiani, N.A. Sapojnikova, M.K. Abuladze, T.M. Kartvelishvili, N.O. Kulikova, E.N. Namchevadze, H-Y. Holman. "Effect of Long-Term Action of Cr(VI) on Antioxidant Enzymes in Cultured Mammalian Cells (an in vitro Study)". J. Inorg. Biochem., 98, 490-496 (2004)https://doi.org/10.1016/j.jinorgbio.2003.12.014
21. H-Y.N. Holman, Z. Lin, N.V. Asatiani, T. Kalabegishvili, N.A. Sapojnikova, M.C. Martin, W.R. McKinney, N.Y. Tsibakhashvili. "Role of the survival strategy of

Arthrobacters in the geochemical cycling of chromium - A spectroscopy and microscopy study". ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, 227, U1221-U1221 (2004)

22. N.G. Bakradze, V.M. Sokhadze, M.K. Abuladze, N.V. Asatiani, N.A. Sapojnikova, T.M. Kartvelishvili, N.Y. Tsibakhashvili, E.N. Namchevadze, L.V. Tabatadze, L.V. Lezhava, H-Y. Holman. "A Calorimetric Characterization of Cr(VI)-Reducing *Arthrobacteroxydans* at Different Phases of the Cell Growth Cycle". TheScientificWorldJOURNAL, 3, 432-442 (2003) http://dx.doi.org/10.1100/tsw.2003.33
23. N.Ya. Tsibakhashvili, N.V. Asatiani, M.K. Abuladze, B.G. Birkaya, N.A. Sapojnikova, L.M. Mosulishvili, H-Y.N. Holman. "Capillary Electrophoresis of Cr(VI)-reducing A. oxydans". Biomed. Chromatography, 16, 327-331 (2002) https://doi.org/10.1002/bmc.157
24. N. Asatiani, M. Abuladze, B. Birkaya, N. Sapojnikova, N. Tsibakhashvili, L. Mosulishvili. "Application of Capillary Electrophoresis to the Analysis of Soluble Chromatin". Biomed. Chromatography, 14, 489-492 (2000) https://doi.org/10.1002/1099-0801(200011)14:7<489::AID-BMC998>3.0.CO;2-F
25. H. Talasz, N. Sapojnikova, W. Helliger, H. Lindner, B. Pushendorf. „In vitro Binding of H1 Histone Subtypes to Nucleosomal Organized Mouse Mammary Tumor Virus Long Terminal Repeat Promotor." The Journal of Biological Chemistry. 273, 32236-32243 (1998) http://www.jbc.org/content/273/48/32236.full.pdf
26. E.S. Gelagutashvili, K.I. Sigua, N.A. Sapojnikova. "Binding and the Nature of Cu(II) Ion Interaction with Nucleosomes". J. Inorg. Biochem., 70, 207-210 (1998)https://doi.org/10.1016/S0162-0134(98)10016-8
27. E.S. Gelagutashvili, I.V. Mikeladze, N.A. Sapojnikova. "Binding and the Nature of Co(II), Ni(II), and Zn(II) Ions Interaction with Nucleosomes". J. Inorg. Biochem., 65, 159-161 (1997) https://doi.org/10.1016/S0162-0134(96)00117-1
28. N.A. Sapozhnikova, N.V. Asatiani, E.I. Ramm, G.S. Ivanov, L.K. Tkeshelashvili, V.I. Vorobyev. "Comparative Study of Nucleosome Particles in Chromatin from Normal and Tumor Cells. I. Structural Parameters". MolBiol (Mosk). 22, 1345-1352 (1988) (in Russian).
29. N.A. Sapozhnikova, N.V. Asatiani, E.I. Ramm, G.S. Ivanov, V.I. Vorobyev. "Comparative Study of Nucleosome Particles in Chromatin from Normal and Tumor Cells. II. Reconstitution, Compaction and Association Induced by Ionic Strength of a Solution. MolBiol (Mosk). 22, 1353-1358 (1988) (in Russian).