Nino Asatiani, Ph.D.

Andronikashvili Institute of Physics
IvaneJavakhishvili Tbilisi State University,

6Tamarashvili
0162 Tbilisi, Georgia

E-mail: nino.asatiani@tsu.ge
Cell: +995 59311 3420

EDUCATION

1985February	Ph.D. in Biochemistry,Durmishidze Institute of Plant Biochemistry, Tbilisi, Georgia
1969-1974	IvaneJavakhishvili Tbilisi State University,Faculty of Chemistry, MSc (Biochemistry)

RESEARCH AREA

- Structure and function of biopolymers under the metals influence. The content of the microelement and their role in structural modification of chromatin proteins histones.
- Prokaryotic and eukaryotic antioxidant defense system in the long-term action of residual concentrations in areas contaminated with heavy metals.
- Biochemical problems related the cell defense mechanisms under heavy metals action.
- Creation of biochips for rapid identification of certain types of bacteria and viruses.

GRANTS COMPLETED:

- STCU-SRNSF grant #6304 (2017-2019) “Development of Quick Response Strategy against Chemical Pollution of Soils by Using Biochips and Biosorbents” (*Participating institution manager*)
- STCU-SRNSF grant #6306 (2017-2019) “DNA diagnostic technology for identification of GM crops” (*Expert in biochemistry*)
- CONTRACT #6600028240 FOR RESEARCH AND DEVELOPMENT from SAUDI ARAMCO OIL COMPANY (2012-2015) “Biochips as tools for rapid detection and enumeration of oilfield microorganisms” (*Leading Expert in Molecular Biology*)
- ISTC grant G-1761p (2010-2012) “Manufacture of biochips for diagnosis of viral and bacterial diseases” (*Scientific Leader*) (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” (*Group Leader*) (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” (*Group Leader, Biochemistry*)(LBNL, Berkeley,USA)
- ISTC grant G-348 (2000-2002) “Heavy Metal Transformation on Microbial-Mineral Surfaces” (LBNL,Berkeley, USA) (*Leading expert in molecular biology*)

RESEARCH/WORK EXPERIENCE

1994- present	Senior Researcher, I.Javakhishvili Tbilisi State University, Andronikashvili Institute of Physics, Tbilisi, Georgia
1986-1994	Researcher, Andronikashvili Institute of Physics, Tbilisi, Georgia
1983-1984	Researcher associate, Institute of Cytology, St. Petersburg, Russia
1979-1986	Junior Researcher, Andronikashvili Institute of Physics, Tbilisi, Georgia
1978-1979	Post-graduate Researcher, Institute of Molecular Biology, Moscow, Russia
1977-1978	Post-graduate Researcher, Andronikashvili Institute of Physics, Tbilisi, Georgia

1973-1977 Senior Technician, Andronikashvili Institute of Physics, Tbilisi, Georgia

AWARDS AND HONORS:

- Dr.Asatiani is included in the International Encyclopaedia Who's Who in Medicine and Healthcare, 2006-2007, Publishers 890 Mountain Ave, Suite 4, New Providence, NJ 07974, 1-800-473-7020 www.marquiswhoswho.com

Mentorships:

1. *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

2. *2007-2008* Postgraduate Programs in Molecular Cell Biology (I. Javakhishvili Tbilisi State University, Faculty of Exact and Natural Sciences).

3. *2006-2008* Instructor of the International Control Program for Mass Destruction of Non-Proliferation (DOE, USA) Lecture course: Chemical Weapon

4. *2002* Supervision of Master Thesis of V. Okuneva (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. Multiplex PCR
4. DNA isolation, purification and electrophoretic characterization
5. Protein expression, isolation, purification and electrophoretic characterization
6. Protein characterization - western blotting
7. Enzyme-in gel assay activity
8. ELISA
9. Comet assay
10. Bacterial culture
11. Eukaryotic cell culture
12. 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, 7-9 November, 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. Health Technology Seminar, 12 – 14 October, 2010, Tbilisi, Georgia.
13. 10th International Symposium on Metal Ions in Biology and Medicine, May 19-22, 2008, Bastia, Corsica, France.
14. International Conference “Protection and Restoration of the Environment VIII” Chania, Greece, July, 2006.
15. The 3rd Berkeley-Stanford Summer School on Synchrotron Radiation and its Application, June, 2003, Berkeley, USA.
16. 12th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, October 4-8, Antalya, Turkey, 2003.
17. 28th Meeting of the Federation of European Biochemical Societies (FEBS), Istanbul, Turkey, October 20-25, 2002.
18. International Conference “Protection and Restoration of the Environment VI”, Skiathos, Greece, July 1-5, 2002.
19. 11th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, October 6-10, 2001, Limassol, Cyprus.
20. International Symposium «Physico-Chemistry of DNA and Molecular Mechanisms of Genome Functioning». Tbilisi, 1987.
21. Soviet-Germany International Symposium “The Chromatin Structure”, 1986, Yurmala, Latvia.

PUBLICATIONS (62); H-INDEX: 8; I-INDEX: 8

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. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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

18. 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)
19. 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
20. 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
21. 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
22. 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).
23. 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).