

CURRICULUM VITAE

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Education

- 2001 – 2004 PhD, Department of Biophysics, faculty of Biology
Yerevan State University, Armenia.
Field of Study: Molecular Biology and Biophysics
- 1999- 2001 MSc, Department of Biophysics, Faculty of Biology
Yerevan State University, Armenia
Field of Study: Biotechnology and Biophysics
- 1995-1999 Department of Biophysics, Faculty of Biology
Yerevan State University, Armenia
Field of Study: Biophysics

Professional Experience

- 2013-Present Research Assistant Professor, Department of Molecular Immunology, Institute for
Molecular Medicine, Huntington Beach, CA.
- 2011-2013 Postdoctoral Scholar-Fellow, Institute for Memory Impairments and Neurological
Disorders, University of California, Irvine, CA
- 2008-2011 Postdoctoral Fellow, Department of Molecular Immunology, Institute for Molecular
Medicine, Huntington Beach, CA.
- 2006-2008 Research Scholar, Department of Molecular Immunology, Institute for Molecular
Medicine, Huntington Beach, CA.
- 2001-2006 Laboratory Specialist, Tissue Typing Laboratory of Armenian Bone Marrow Donor
Registry Charitable Trust, Armenia.
- 2001-2004 Graduate Student, Laboratory of Molecular Biology, Department of Biophysics, Faculty of
Biology, Yerevan State University, Armenia.

Membership

- 2010-present Member of Society for Neuroscience (SfN)
- 2009-present Member of American Association of Immunology (AAI)
- 2007-present Member of American Society for Histocompatibility and Immunogenetics (ASHI)
- 2004-present Member of Pan-Armenian Biophysics Association

Oral Presentations and Posters

1. **Davtyan H.**, Petrushina I., Evans C.F., Hovakimyan A., Davtyan A., Hannaman D., Cribbs D.H., Ghochikyan A., Agadjanyan M.G. MultiTEP platform based AD vaccine immunogenic in rabbits and monkeys. *Clinical Trials on Alzheimer's Disease (CTAD), San Diego, CA 2013, November 14-16.*
2. Selenica ML. B., Housley A.B., Blair L., **Davtyan H.**, Sanneh A., Mouse T., Morgan D., Gordon M.N., Dickey C. Immunotherapy targeting human wild type and P301L Tau results in immune response and changes in tau level in rTG4510 mouse model. *Alzheimer's Association International Conference (AAIC), Boston, MA, 2013, July 13-18. Alzheimer's and Dementia, Vol. 9, Issue 4, Supplement, Pages P509-P510.*
3. A. Ghochikyan, **H. Davtyan**, I. Petrushina, A. Hovakimyan, A. Davtyan, N. Movsesyan, A. Kiyatkin, D. Hannaman, C.F. Evans, D.H. Cribbs, M.G. Agadjanyan. Refinement of Alzheimer's Disease DNA-based epitope vaccine: broad coverage of MHC polymorphism and targeting pre-existing memory T cells. *11th International Conference AD/PD, Florence, Italy, 2013, March 6-10.*
4. **H. Davtyan**. Epitope-based DNA vaccine for Alzheimer's disease: translational study in macaques. *4th Annual Emerging Scientists Symposium, ReMIND, UC Irvine, 2013, February 21.*
5. A. Davtyan, , A. Ghochikyan, A. Hovakimyan, , **H. Davtyan**, A. Poghosyan, A. Bagaev, R.I. Ataulkhanov, E.L. Nelson, M.G. Agadjanyan. Primary breast 4T1 tumor resection model for the testing for anti-cancer therapeutics. *X Immunology Fair, UCI, Irvine, CA, 2012, November 15-16.*
6. **H. Davtyan**, A. Ghochikyan, I. Petrushina, A. Hovakimyan, N. Movsesyan, A. Kiyatkin, Hannaman, C.F. Evans, D.H. Cribbs, M.G. Agadjanyan. Translational study: Refinement of DNA based Alzheimer's disease epitope vaccine in rabbits. *Alzheimer's Association International Conference (AAIC), Vancouver, BC, Canada, 2012, July 14-19.*
7. **H. Davtyan**, A. Ghochikyan, I. Petrushina, A. Hovakimyan, A. Davtyan, A. Poghosyan, D.H. Cribbs, M.G. Agadjanyan. Multiple approaches to immunotherapy against Alzheimer's disease. *Brainwaves Research Symposium, Santa Barbara, CA, 2012, April 19.*
8. Ghochikyan A., **Davtyan H.**, Petrushina I., Movsesyan N., Evans C.F., Hannaman D., Cribbs D.H., Agadjanyan M.G. Refinement of Alzheimer's Disease (AD) DNA Vaccine Efficacy by Targeting Pre-Existing Memory Th Cells Generated from Conventional Vaccines or Infections. *Vaccines, San Diego, CA, 2011, July 12-14.*
9. **H. Davtyan**, A. Ghochikyan, N. Movsesyan, I. Petrushina, R. Cadagan, D. Zamarin, L. Martinez-Sobrido, R.A. Albrecht, A. García-Sastre, M.G. Agadjanyan. A Novel Strategy for Generation of Effective and Safe Alzheimer's Disease Vaccine Based on Conventional Influenza Virus Vaccine Modified to Express A β ₁₋₁₀. *10th International Conference AD/PD, Barcelona, Spain, 2011 March 9-13.*
10. **H. Davtyan**, A. Ghochikyan, M. Mkrtychyan, N. Movsesyan, I. Petrushina, D.H. Cribbs, M.G. Agadjanyan. Exploiting prime-boost regimen and various delivery strategies to improve Alzheimer's Disease DNA vaccine efficacy. *International Conference on Alzheimer's Disease (ICAD), Alzheimer's Association, Honolulu, Hawaii, 2010, July 10-15.*

11. A.K. Laust, M. Mkrtychyan, **H. Davtyan**, J. Khlgatyan, A. Ghochikyan, H. Liu, M.G. Agadjanyan, E.L. Nelson. Therapeutic replicon-based immunotherapy targeting the breast cancer tumor antigens neu & BORIS: Advantages and constraints. *2010 ASCO Annual Meeting, 2010 June 4-8.*
12. M. Mkrtychyan, A. Ghochikyan, D. Loukinov, A.K. Laust, N. Movsesyan, **H. Davtyan**, V. Lobanenkov, E.L. Nelson, M.G. Agadjanyan. A Novel Cancer-Testis Antigen, BORIS Based Vaccine Delivered by Dendritic Cells is Effective against Metastatic Disease. *AACR 101st Annual Meeting, Washington, DC, 2010, April 17-21.*
13. Laust A.K., Khlgatyan J., Ghochikyan A., Mkrtychyan M., **Davtyan H.**, Liu H., Agadjanyan M.G., Nelson E.L. Multivalent VPR-based anti-tumor immunotherapy is an effective therapeutic strategy in a rat model of breast cancer. *AACR 101st Annual Meeting, Washington, DC, 2010, April 17-21.*
14. **H. Davtyan**, M. Mkrtychyan, N. Movsesyan, I. Petrushina, C. Evans, D.H. Cribbs, M.G. Agadjanyan, A. Ghochikyan. Improvement of Alzheimer's Disease (AD) DNA Vaccine Efficacy by DNA Prime/Protein Boost Regimen in Mice and Rabbits. *DNA Vaccines, New Orleans, LA, 2010, March 2-4.*
15. M. Mkrtychyan, J. Khlgatyan, D. Loukinov, N. Movsesyan, **H. Davtyan**, A. Ghochikyan, M.G. Agadjanyan. DNA vaccine Based on Cancer-Testis Antigen, BORIS and IL21 molecular adjuvant in extremely effective for treatment of Metastatic Disease. *DNA Vaccines, New Orleans, LA, 2010, March 2-4.*
16. Khlgatyan J., Mkrtychyan M., Loukinov D., Tiraturyan T., **Davtyan H.**, Laust A., Ghochikyan A., Nelson E.L., Agadjanyan M.G. Cancer testis antigen, BORIS vaccine delivered by DC is highly effective in treatment of primary mammary carcinoma and metastatic disease. *7th Immunology Fair, UCI, Irvine, CA, 2009.*
17. Ghochikyan A., **Davtyan H.**, Movsesyan N., Mkrtychyan M., Petrushina I., Cribbs D.C., Agadjanyan M.G. Induction of Rapid and Robust Anti-A β Antibody Production by Reactivation of Pre-Existing Memory Th Cells Generated From Conventional Vaccines. *International Conference on Alzheimer's Disease (ICAD), Alzheimer's Association, Vienna, Austria, 2009 July 11-16.*
18. Ghochikyan A., **Davtyan H.**, Movsesyan N., Mkrtychyan M., Petrushina I., Cribbs D.C., Agadjanyan M.G. Third generation epitope vaccine (EV): A new Strategy for A β immunotherapy. *9th International Conference AD/PD, Prague, Czech Republic, 2009 March 11-15.*
19. Ghochikyan A., Martinez L., Movsesyan N., Mkrtychyan M., Petrushina I., **Davtyan H.**, Cribbs D.H., Garcia-Sastre A., Agadjanyan M.G. The novel strategy for generation of effective and safe Alzheimer's Disease vaccine based on conventional influenza virus vaccine modified to express A β ₁₋₁₁. *International Conference on Prevention of Dementia. Chicago, IL, 2008.*
20. Vardevanyan P.O., Antonyan A.P., **Davtyan H.G.**, Navasardyan L.A., Boyajyan Z.R., Karapetian A.T. // Particularity of complex formation of ethidium bromide with DNA. *Materials of International Conference "The role of the biologically active substances in the integrative activity*

of the organism in normal conditions and in the process of adaptative syndrome formation". YSMU, 2004, Armenia, N 2, p.21.

21. Vardevanyan P.O., Antonyan A.P., Parsadanyan M.A., **Davtyan H.G.**, Markaryan A.Sh., Kazaryan R.S., Babayan Yu.S. // Disperse of bound ligands method in study of adsorption isotherm. *Proceedings of 13th Conversation on Biomolecular Structure and Dynamics, 2003, Albany, J.Biomol. Struct. Dyn., vol. 20, N 6, p.857.*
22. Vardevanyan P.O., Antonyan A.P., Minasbekyan L.A., Parsadanyan M.A., **Davtyan H.G.**, Vardapetyan H.R., Karapetyan A.T // Investigation of interaction of biological active compounds with DNA. *Abstracts of International Symposium on "Dietary Phytochemicals and Human Health", 2002, Salamanca, Spain, p.155.*
23. Vardapetyan H.R., Kirakosyan A.B., Hovhannisyan A.A., **Davtyan H.G.**, Abazyan R.H. // Influence of elisitors activity involving in biosynthesis of lignans in cell cultures of *L. Austriacum*. *Conference of biotechnology, 2001, Damascus, Syria, p.28.*

Publications

1. **Davtyan H.**, Hovakimyan A., Zagorski K., Davtyan A., Petrushina I., Agdashian D., Murthy V., Cribbs D.H., Agadjanyan M.G., Ghochikyan A, BTX AgilePulse^{MT} System is an Effective Electroporation Device for Intramuscular and Intradermal Delivery of DNA Vaccine. *Curr Gene Ther.* 2014, *In press.*
2. **Davtyan H.**, Petrushina I, Ghochikyan A. Immunotherapy for Alzheimer's disease: DNA- and protein-based epitope vaccines. *Methods Mol Biol.* 2014; 1143:259-81. doi: 10.1007/978-1-4939-0410-5_16.
3. **Davtyan H.**, Ghochikyan A, Petrushina I., Hovakimyan A., Davtyan A., Cribbs D.H., Agadjanyan M.G., MultiTEP platform-based AD epitope vaccine activates broad repertoire of T helper cells in non-human primates. *Alzheimers Dement.* 2014 May; 10(3):271-83. doi:10.1016/j.jalz.2013.12.003. Epub 2014 Feb 20.
4. **Davtyan H.**, Ghochikyan A., Hovakimyan A., Petrushina I., Yu J., Flyer D., Madsen P.J., Pedersen L.O., Cribbs D.H., Agadjanyan M.G., Immunostimulant patches containing *Escherichia coli* LT enhance immune responses to DNA- and recombinant protein-based Alzheimer's disease vaccines. *J Neuroimmunol.* 2014 Mar 15;268(1-2):50-7. doi: 10.1016/j.jneuroim.2014.01.002. Epub 2014 Jan 15.
5. Ghochikyan A, Davtyan A, Hovakimyan A, **Davtyan H.**, Poghosyan A, Bagaev A, Ataulakhanov RI, Nelson EL, Agadjanyan MG. Primary 4T1 tumor resection provides critical "window of opportunity" for immunotherapy. *Clin Exp Metastasis.* 2014 Feb;31(2):185-98. doi: 10.1007/s10585-013-9619-0. Epub 2013 Oct 6.
6. **Davtyan H.**, Bacon A., Petrushina I., Zagorski K., Cribbs D.H., Ghochikyan A., Agadjanyan M.G., Immunogenicity of DNA- and recombinant protein-based Alzheimer Disease Epitope Vaccines. *Hum Vaccin Immunother.* 2014 Feb 13;10(5):1-8. [Epub ahead of print].

7. Ghochikyan A., Petrushina I., **Davtyan H.**, Hovakimyan A., Saing T., Davtyan A., Cribbs D.H., Agadjanyan M.G., Immunogenicity of epitope vaccines targeting different B cell antigenic determinants of human α -synuclein: Feasibility study. *Neurosci Lett*. 2014 Feb 7;560:86-91. doi: 10.1016/j.neulet.2013.12.028. Epub 2013 Dec 19.
8. Evans C.F.[#], **Davtyan H.**[#], Petrushina I., Hovakimyan A., Davtyan A., Hannaman D., Cribbs D.H., Agadjanyan M.G. Ghochikyan A. // Epitope-based DNA vaccine for Alzheimer's disease: translational study in macaques. *Alzheimers Dement*. 2014 May;10(3):284-95. doi: 10.1016/j.jalz.2013.04.505. Epub 2013 Jul 31. [#]These authors contributed equally to this work.
9. **Davtyan H.**, Ghochikyan A., Petrushina I., Hovakimyan A., Davtyan A., Poghosyan A., Marleau A.M., Movsesyan N., Kiyatkin A., Rasool S., Larsen S.A., Madsen P.J., Wegener K.M., Ditlevsen D.K., Cribbs D.H., Pedersen L.O., Agadjanyan M.G.. // Immunogenicity, Efficacy, Safety, and Mechanism of Action of Epitope Vaccine (Lu AF20513) for Alzheimer's Disease: Prelude to a Clinical Trial. *Journal of Neuroscience*, 2013, Mar 13; 33(11):4923-34.
10. Cohen R., Rezai-Zadeh K., Weitz T., Rentsendorj A., Gate D., Spivak I., Bholat Y., Vasilevko V., Glabe C., Breunig J., Rakic P., **Davtyan H.**, Kepe V., Barrio J., Bannykh S., Szekely C., Pechnick R., and Town T. // A transgenic Alzheimer rat with plaques, tau pathology, behavioral impairment, oligomeric A β and frank neuronal loss. *Journal of Neuroscience*. 2013 Apr 10; 33(15):6245-6256.
11. Ghochikyan A.[#], **Davtyan H.**[#], Petrushina I., Hovakimyan A., Movsesyan N., Davtyan A., Kiyatkin A., Hannaman D., Evans C.F., Cribbs D.H., Agadjanyan M.G. // Refinement of a DNA based Alzheimer's disease epitope vaccine in rabbits, *Human Vaccine and Immunotherapeutic*, 2013, Feb 11;9(5). [#]These authors contributed equally to this work.
12. **Davtyan H.**, Ghochikyan A., Movsesyan N., Petrushina I., Ellefsen B., Cribbs D.H., Hannaman D., Evans C.F., Agadjanyan M.G. // Delivery of a DNA vaccine for Alzheimer's disease by electroporation or gene gun generates potent and similar immune responses. *Neurodegenerative Diseases*, 2012; 10(1-4):261-264.
13. **Davtyan H.**, Ghochikyan A., Cadagan R., Zamarin D., Petrushina I., Movsesyan N., Martinez-Sobrido L., Albrecht R.A., García-Sastre A., Agadjanyan M.G. // The immunological potency and therapeutic potential of a prototype dual vaccine against influenza and Alzheimer's disease. *Journal of Translational Medicine*, 2011, 9:127.
14. Mkrtychyan M., Ghochikyan A., **Davtyan H.**, Movsesyan N., Loukinov D., Lobanenkov V., Cribbs D.H., Laust A.K., Nelson E.L., Agadjanyan A.G. // Cancer-testis antigen, BORIS based vaccine delivered by dendritic cells is extremely effective against very aggressive and highly metastatic mouse mammary carcinoma. *Cellular Immunology*, 2011;270 (2):188-97.
15. Movsesyan N, **Davtyan H.**, Mkrtychyan M, Petrushina I, Tiraturyan T, Ross TM, Agadjanyan MG, Ghochikyan A, Cribbs DH. 2010. Low concentrations of anti-A β antibodies generated in Tg2576 mice by DNA epitope vaccine fused with 3C3d molecular adjuvant do not affect AD pathology. *Human Gene Therapy*, 2010, 21(11): 1569-1576.
16. **H. Davtyan**, M. Mkrtychyan, N. Movsesyan, I. Petrushina, G. Mamikonyan, D.H. Cribbs, M.G. Agadjanyan, A. Ghochikyan // DNA prime/protein boost increased the titer, avidity and

persistence of anti-A β antibodies in wild-type mice. *Gene Therapy*, 2010, USA, 17, No 2, 261–271.

17. N. Movsesyan, A. Ghochikyan, M. Mkrtichyan, I. Petrushina, **H. Davtyan**, PB Olkhanud, E Head, A. Biragyn, D.H. Cribbs, M.G. Agadjanyan // Penotype DNA epitope vaccine prevents behavioral impairment and AD-like pathology in 3xTg-AD mouse model without inducing cerebral hemorrhages. *PLoS One*, 2008, vol. 3, No 5, e2124.
18. M. Mkrtichyan, A. Ghochikyan, D. Loukinov, **H. Davtyan**, T.E. Ichim, D.H. Cribbs, V.V. Lobanenkov, M.G. Agadjanyan. // DNA but not protein vaccine based on mutated BORIS antigen significantly inhibits tumor growth and prolongs the survival of mice. *Gene Therapy*, 2008, USA, vol. 15, No 1, 61-64.
19. I. Petrushina, A. Ghochikyan, M. Mkrtichyan, G. Mamikonyan, N. Movsesyan, **H. Davtyan**, A. Patel, E. Head, D.H. Cribbs, M.G. Agadjanyan // The Second Generation Therapeutic Vaccine Reduces Insoluble but not Soluble/Oligomeric A β Species in APP/Tg Mice. *The Journal of Neuroscience*, 2007, USA, vol. 27, No 46, 12721-31.
20. Minasyan S.G., Tavadyan L.A., Antonyan A.P., **Davtyan H.G.**, Parsadanyan M.A., Vardevanyan P.O. // Differential pulse voltammetric studies of ethidium bromide binding to DNA. *Bioelectrochemistry*, 2006, Switzerland, vol. 68, No 1, 48-55.
21. Vardevanyan P.O., Antonyan A.P., **Davtyan H.G.**, Arakelyan A.V., Minasyan S.G., Tavadyan L.A. // Assessment of Ethidium Bromide Binding to DNA by Differential Pulse Voltammetry. *Biophysics*, 2005, Russia, vol. 50, No 2, 342-344.
22. Vardevanyan P.O., Antonyan A.P., Parsadanyan M.A., **Davtyan H.G.**, Boyajyan Z.R., Karapetian A.T. // Complex-formation of ethidium bromide with poly[d (A-T)] - poly[d (A-T)]. *J. Biomol. Struct. Dyn.*, 2005, USA, vol. 22, No 4, 465-470.
23. **Davtyan H.G.** // Interaction of Ethidium Bromide with synthetic homopolynucleotide poly[d(A-T)]-poly[d(A-T)]. *Scientific Transactions YSU*, 2004, Armenia, No 1, 94-98.
24. Vardevanyan P.O., Antonyan A.P., Parsadanyan M.A., **Davtyan H.G.**, Karapetian A.T // The binding of Ethidium Bromide with DNA: interaction with Single- and Double-Stranded Structures. *Experimental and Molecular Medicine*, 2003, Korea, vol. 35, No 6, 527-533.
25. Vardevanyan P.O., Antonyan A.P., **Davtyan H.G.**, Karapetian A.T. // The Binding Ethidium Bromide with Single-Stranded DNA. *Biophysics*, 2003, Russia, vol. 48, No 4, 644-648.
26. Antonyan A.P., **Davtyan H.G.**, Vardevanyan P.O. // Formation semi-intercaliation complexes at EtBr interaction with DNA. *Scientific Transactions YSU*, 2003, Armenia, No 3, 97-102.