Curriculum Vitae (CV)

Personal Information

C.V. last edited on: 2024/00/00

Name: Hassan Aryapour
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Educational History

B.Sc. **1998-2001** **Biology**	Biology Dept., Faculty of Sciences, University of Sistan and Baluchistan, Sistan and Baluchistan, Iran. http://www.usb.ac.ir
M.Sc. **2001-2004** **Biochemistry**	Molecular Biology Lab., Biochemistry Dept., Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran. www.ibb.ut.ac.ir **M.Sc. Dissertation:** Studies on the position of nonhistone chromatin protein (LMG_{160}) in the chromatin fractions of rat liver nuclei **M.Sc. Thesis Supervisors:** Prof. A. Rabbani Chadegani : rabbani@ibb.ut.ac.ir
Ph.D. **2006-2010** **Biochemistry**	Bioorganic Lab., Biochemistry Dept., Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran. www.ibb.ut.ac.ir **Ph.D. Dissertation:** Study of biological effects of novel synthesized derivates of curcumin on microtubule structures *in vitro* and on SK-N-MC and K562 cell lines **Ph.D. Thesis Supervisors:** Prof. G.H. Riazi : ghriazi@ibb.ut.ac.ir **Ph.D. Thesis Advisers:** Prof. A. Foroumadi : aforoumadi@yahoo.com Prof. S. Ahmadian : ahmadian@ibb.ut.ac.ir

♣ Publications

I. Full Papers

1. Yamchi, A., Rahimi M., Akbari R., Ghobadi C., Aryapour H. **Effects of Bacillus in Pectobacterium quorum quenching: A survey of two different acyl-homoserine lactonases**. *Folia microbiologica*. 2024;69(4):913-926. **DOI:** 10.1007/s12223-024-01139-2

2. Rahebi, P., Aryapour H. **Reconstruction of the unbinding pathways of new inhibitors of the SARS-CoV-2 papain-like protease using molecular dynamics simulation**. *J Biomol Struct Dyn*. 2023:1-14. **DOI:** 10.1080/07391102.2023.2240424

3. Noroozi Tiyoula, F., Aryapour H. **Reconstruction of the unbinding pathways of noncovalent SARS-CoV and SARS-CoV-2 3CLpro inhibitors using unbiased molecular dynamics simulations**. *PLoS One*. 2022;17(2):e0263251. **DOI:** 10.1371/journal.pone.0263251

4. Tiyoula, F. N., Aryapour H., Moghadam M. J. **Comparative study of the unbinding process of some HTLV-1 protease inhibitors using unbiased molecular dynamics simulations**. *PLoS One*. 2022;17(7):e0263200. **DOI:** 10.1371/journal.pone.0263200

5. Sohraby, F., Aryapour H. **Comparative analysis of the unbinding pathways of antiviral drug Indinavir from HIV and HTLV1 proteases by supervised molecular dynamics simulation**. *PLoS One*. 2021;16(9):e0257916. **DOI:** 10.1371/journal.pone.0257916

6. Sohraby, F., Aryapour H. **Reconstruction of the binding pathway of an anti-HIV drug, Indinavir, in complex with the HTLV-1 protease using unaggregated unbiased molecular dynamics simulation**. *Comput Biol Chem*. 2021;96:107616. **DOI:** 10.1016/j.compbiolchem.2021.107616

7. Sohraby, F., Aryapour H. **Unraveling the unbinding pathways of SARS-CoV-2 Papain-like proteinase known inhibitors by Supervised Molecular Dynamics simulation**. *PLoS One*. 2021;16(5):e0251910. **DOI:** 10.1371/journal.pone.0251910

8. Sohraby, F., Javaheri Moghadam M., Aliyar M., Aryapour H. **Complete reconstruction of dasatinib unbinding pathway from c-Src kinase by supervised molecular dynamics simulation method; assessing efficiency and trustworthiness of the method**. *J Biomol Struct Dyn*. 2021:1-11. **DOI:** 10.1080/07391102.2021.1972839

9. Hassanian, M., Aryapour H., Goudarzi A., Javan M. B. **Are zinc oxide nanoparticles safe? A structural study on human serum albumin using in vitro and in silico methods**. *J Biomol Struct Dyn*. 2021;39(1):330-335. **DOI:** 10.1080/07391102.2019.1711189

10. Sohraby, F., Aryapour H. **Rational drug repurposing for cancer by inclusion of the unbiased molecular dynamics simulation in the structure-based virtual screening approach: Challenges and breakthroughs**. *Semin Cancer Biol*. 2021;68:249-257. **DOI:** 10.1016/j.semcancer.2020.04.007

11. Sohraby, F., Javaheri Moghadam M., Aliyar M., Aryapour H. **A boosted unbiased molecular dynamics method for predicting ligands binding mechanisms: probing the binding pathway of dasatinib to Src-kinase**. *Bioinformatics*. 2020;36(18):4714-4720. **DOI:** 10.1093/bioinformatics/btaa565

12. Khedrinia, M., Aryapour H., Mianabadi M. **Prediction of novel inhibitors for Crotalus adamanteus l-amino acid oxidase by repurposing FDA-approved drugs: a virtual screening and molecular dynamics simulation investigation**. *Drug and chemical toxicology*. 2019:1-10. **DOI:** 10.1080/01480545.2019.1614022

13. Sohraby, F., Bagheri M., Javaheri Moghadam M., Aryapour H. **In silico prediction of new inhibitors for the nucleotide pool sanitizing enzyme, MTH1, using drug repurposing**. *J Biomol Struct Dyn*. 2018;36(10):2628-2636. **DOI:** 10.1080/07391102.2017.1365013

14. Mofidifar, S., Sohraby F., Bagheri M., Aryapour H. **Repurposing existing drugs for new AMPK activators as a strategy to extend lifespan: a computer-aided drug discovery study. Biogerontology.** 2018;19(2):133-143. DOI: 10.1007/s10522-018-9744-x

15. Aryapour, H., Dehdab M., Sohraby F., Bargahi A. **Prediction of new chromene-based inhibitors of tubulin using structure-based virtual screening and molecular dynamics simulation methods**. *Comput Biol Chem*. 2017;71:89-97. **DOI:** 10.1016/j.compbiolchem.2017.09.007

16. Sohraby, F., Bagheri M., Aliyar M., Aryapour H. **In silico drug repurposing of FDA-approved drugs to predict new inhibitors for drug resistant T315I mutant and wild-type BCR-ABL1: A virtual screening and molecular dynamics study**. *J Mol Graph Model*. 2017;74:234-240. **DOI:** 10.1016/j.jmgm.2017.04.005

17. Sohraby, F., Bagheri M., Javaheri Moghadam M., Aryapour H. **In silico prediction of new inhibitors for the nucleotide pool sanitizing enzyme, MTH1, using drug repurposing**. *Journal of Biomolecular Structure and Dynamics*. 2017:1-9. **DOI:** 10.1080/07391102.2017.1365013

18. Taheri, S. M., Aryapour H. **Identification of new inhibitors of tubulin from marine resources using structure-based virtual screening**. *Biotechnology Tarbiat Modares University*. 2016;7(3):80-90. (Persian).

19. Ghadimi, A., Sariri R., Aryapour H., Erfani A., Nosratabadi F. **Variations in biological activity of salivary enzymes of smokers**. *Iranian Journal of Biology*. 2014;27(1):125-135. (Persian).

20. Javaheri, M. M., Aryapour H., Dehno-khalaji A. **Designing new chromene compounds with anticancer activity and studying their interaction with tubulin by molecular docking method**. *Iranian Journal of Biology*. 2014;178-190. (Persian).

21. Saffari, Z., Aryapour H., Akbarzadeh A., Foroumadi A., Jafari N., Farahnak Zarabi M., Farhangi A. **In vitro antitumor evaluation of 4H-chromene-3-carbonitrile derivatives as a new series of apoptotic inducers**. *Tumour biology : the journal of the International Society for Oncodevelopmental Biology and Medicine*. 2014;35(6):5845-5855. **DOI:** 10.1007/s13277-014-1775-6

22. Saffari, Z., Zarabi M., Aryapour H., Foroumadi A., Farhangi A., Ghassemi S., Akbarzadeh A. **Cytotoxicity and Apoptosis Inducing Activities of 2-Amino-4H-chromene-3-carbonitrile Derivatives Loaded on Gold Nanoparticles Against Human Breast Cancer Cell Line T47D**. *Ind J Clin Biochem*. 2014;30(2):1-10. **DOI:** 10.1007/s12291-014-0417-5

23. Zakariazadeh, M., Barzegar A., Soltani S., Aryapour H. **Developing 2D-QSAR models for naphthyridine derivatives against HIV-1 integrase activity**. *Medicinal Chemistry Research*. 2014;24:1-20. **DOI:** 10.1007/s00044-014-1305-5

24. Banimustafa, M., Kheirollahi A., Safavi M., Kabudanian Ardestani S., Aryapour H., Foroumadi A., Emami S. **Synthesis and biological evaluation of 3-(trimethoxyphenyl)-2(3H)-thiazole thiones as combretastatin analogs**. *Eur J Med Chem*. 2013;70:692-702. **DOI:** 10.1016/j.ejmech.2013.10.046

25. Mohammadhosseini, N., Saniee P., Ghamari Pour A., Aryapour H., Afshar F., Edraki N., Siavoshi F., Foroumadi A., Shafiee A. **Synthesis and biological evaluation of novel benzyl piperazine derivatives of 5-(5-nitroaryl)-1,3,4-thiadiazoles as Anti-Helicobacter pylori agents**. *Daru : journal of Faculty of Pharmacy, Tehran University of Medical Sciences*. 2013;21(1):66. **DOI:** 10.1186/2008-2231-21-66

26. Aryapour, H., Mahdavi M., Mohebbi S. R., Zali M. R., Foroumadi A. **Anti-proliferative and apoptotic effects of the derivatives from 4-aryl-4H-chromene family on human leukemia K562 cells**. *Archives of pharmacal research*. 2012;35(9):1573-1582. **DOI:** 10.1007/s12272-012-0908-y

27. Aryapour, H., Riazi G. H., Ahmadian S., Foroumadi A., Mahdavi M., Emami S. **Induction of apoptosis through tubulin inhibition in human cancer cells by new chromene-based chalcones**. *Pharmaceutical biology*. 2012;50(12):1551-1560. **DOI:** 10.3109/13880209.2012.695799

28. Karima, O., Riazi G., Khodadadi S., Aryapour H., Khalili M. A., Yousefi L., Moosavi-Movahedi A. A. **Altered tubulin assembly dynamics with N-homocysteinylated human 4R/1N tau in vitro**. *FEBS Lett*. 2012;586(21):3914-3919. **DOI:** 10.1016/j.febslet.2012.09.024

29. Khodadadi, S., Riazi G. H., Ahmadian S., Hoveizi E., Karima O., Aryapour H. **Effect of N-homocysteinylation on physicochemical and cytotoxic properties of amyloid beta-peptide**. *FEBS Lett*. 2012;586(2):127-131. **DOI:** 10.1016/j.febslet.2011.12.018

30. Aryapour, H., Riazi G., Foroumadi A., Ahmadian S., Shafiee A., Karima O., Mahdavi M., Emami S., Sorkhi M., Khodadady S. **Biological evaluation of synthetic analogues of curcumin: chloro-substituted-2'-hydroxychalcones as potential inhibitors of tubulin polymerization and cell proliferation**. *Medicinal Chemistry Research*. 2011;20(4):503-510. **DOI:** 10.1007/s00044-010-9344-z

31. Shokrollahi, B., Aryapour H. **A novel male-specific DNA sequence for river buffaloes**. *African Journal of Microbiology Research*. 2011;5(3):284-288. **DOI:** 10.5897/AJMR10.817

32. Rabbani, C. A., Aryapour H., Abdulsamadi S. **Studies on the position of nonhistone chromatin protein (LMG_{160}) in the chromatin fractions of rat liver nuclei**. *Iranian Journal of Biology*. 2006;19(2):215-221. (Persian).

II. Congress Attendance and Presentation

1. Ghamaripour, A., Ardestani S., Foroumadi A., Akbarzadeh T., Aryapour H., Motavallizadeh S. **Effect of N-((5-nitro -1H-imidazol-yl-2)methylene)benzohydrazid derivatives on Reactive Oxygen Species production**. 12th International Congress Of Immunologyand Allergy; 2014; Tehran, Iran.

2. Javaheri, M. M., Aryapour H., Dehno-khalaji A. **Designing new 4h-chromene compounds with anticancer activity and studying their interaction with tubulin using molecular docking approach**. 12th International Congress Of Immunologyand Allergy; 2014; Tehran, Iran.

3. Ghamaripour, A., Motavallizadeh S., Foroumadi A., Akbarzadeh T., Ardestani S. K., Aryapour H. **Anti-leishmanial Effects of N-((5-nitro-1H-imidazol-2yl)-methylene) benzohydrazid**. 13th Iranian congress of biochemistry and 5th international congress of biochemistry and molecular biology; 2013; Yazd, Iran.

4. Latifimehr, M., Iravani A., Pourfallah F., Sadeghi S., Arjmand M., Vahabi F., Aryapour H., Kadivar M., Kalaiee Z., Biglari A., Zamani Z. **Metabononic study of the effect of turmeric extract on Raji cells *in vitro***. 13th Iranian congress of biochemistry and 5th international congress of biochemistry and molecular biology; 2013; Yazd, Iran.

5. Zakariazadeh, M., Barzegar A., Soltani S., Aryapour H. **Study of the new class of HIV-integrase inhibitors using QSAR model via stepwise-MLR algorithm**. 13th Iranian congress of biochemistry and 5th international congress of biochemistry and molecular biology; 2013; Yazd, Iran.

6. Zakariazadeh, M., Barzegar A., Soltani S., Yazdani M., Aryapour H. **Developing consensus QSAR models of Naphthyridine analogues as anti HIV-1 integrase activity**. 1st Tabriz International Life Science Conference & 12th Iran Biophysical Chemistry Conference; 2013; Tabriz, Iran.

7. Ghadimi, A., Sariri R., Aryapour H., Taheri M., Nosratabadi F. **Antioxidant potential of saliva is impaired due to smoking**. The 17th National & 5th International Iranian Biology Conference (IBC17th); 2012; Kerman, Iran.

8. Aryapour, H., Riazi G. H., Ahmadian S., Foroumadi A., Mahdavi M., Emami S. **Induction of apoptosis through tubulin inhibition in human cancer cells by new chromene-based chalcones**. The 36th FEBS CONGRESS Biochemistry for Tomorrow's Medicine; 2011; Turin, Italy.

9. Aryapour, H., Riazi G., Foroumadi A., Ahmadian S., Shafiee A., Karima O., Mahdavi M., Emami S., Sorkhi M., Khodadady S. **Synthesis and Biological Evaluation of Enone Analogues of Curcumin as Potential Inhibitors of Tubulin Assembly and Cell**

Proliferating. 21st IUBMB International Congress and 12th FAOBMB Congress of Biochemistry and Molecular Biology; 2009; Shanghai, China.

10. Aryapour, H., Rezaei S. **Relationship between TP53 mutations and gastric cancer in Iranian patients**. The 9th Iranian Congress of Biochemistry & the 2nd International congress of Biochemistry and Molecular Biology; 2007; Shiraz, Iran.

11. Aryapour, H., Rabbani Chadegani A., Abdulsamadi S. **Studies on the position of non-histone protein, LMG_{160} in chromatin**. The 30th Federation of European Biochemical Societies (FEBS) Congress and 9th IUBMB Conference; 2005; Budapest, Hungary.

12. Aryapour, H., Rabbani Chadegani A. **The role of LMG_{160} in chromatin remodeling (In Persian)**. The 12th Biology Congress; 2004; Hamadan, Iran.

13. Aryapour, H., Rabbani Chadegani A. **Binding of LMG_{160} to Dinucleosomes**. The 17th FAOBMB Symposium/2nd IUBMB Special Meeting/Asia-Pacific-IMBN Conference; 2004; Bangkok, Thailand.

III. Books

1. Sohraby F., Bagheri M., Aryapour H. (2018) **'Performing an in silico repurposing of existing drugs by combining virtual screening and molecular dynamics simulation'**. *Computational Methods for Drug Repurposing*, Humana Press, 2018, Online ISBN: 978-1-4939-8955-3, Vol. 1903, 405 Pages .DOI: 10.1007/978-1-4939-8955-3. (In English-Book chapter)

2. Aryapour, H., Imani M., Pazhang Y., Mohammadi M. **Principles of Biochemistry (Structure & Metabolism)**. Iran: Tandis; 2009. 362 Pages. ISBN: 978-964-6711-95-5. (In Persian)

♣ Professional History

A. Practical Experiences

- ✓ Protein (tubulin) and DNA extraction & purification, Western Blotting.
- ✓ Apoptosis & necrosis assays, *In vitro* cytotoxicity assays, Cell culture (adherent and nonadherent cells), Analysis of cell cycle by flow cytometry.
- ✓ UV-Visible, Circular Dichroism (CD) & Fluorescence Spectroscopy, Ligand-Receptor Binding study.
- ✓ Immunocytochemical study, Fluorescence microscopy, Transmission electron microscopy (TEM).
- ✓ Chromatography (Gel Filtration, Anion exchange), Electrophoresis (SDS-PAGE, PAGE, Agaros), SSCP.
- ✓ Experiences & Skills in Molecular Modeling & Molecular Docking softwares related to Computational Drug Discovery and Design, Such as Gromacs, Autodock, Modeler, GOLD, MOE (Molecular Operating Environment), ICM-Pro, Chimera, Dragon, PyMOL, LigPlot and Online databases, and so on.

B. Teaching History

- ✓ Teaching of Plant Biochemistry, (Ph.D Course), since 2012-216.

- ✓ Teaching Bioinformatics, Animal Cell & Tissue Culture, Control of Metabolism, Hormone Biochemistry, Chromatin Biochemistry, Methods in Biochemistry and Enzymology. (postgraduate Course), since 2010
- ✓ Teaching of Biochemistry I, II (both theoretical & practical), Cell & Molecular Biology (both theoretical & practical) and Biophysics. (Graduate Course), since 2004

C. Academic Administrative Appointments and Executive Positions

- ✓ Assistant Professor of Biochemistry, Department of Biology, Faculty of Science, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran. From 2006 to 2012.
- ✓ Assistant Professor of Biochemistry, Department of Biology, Faculty of Science, Golestan University, Gorgan, Iran. Since 2012
- ✓ Head of Department of Biology, Faculty of Science, Science and Research Branch, Islamic Azad University of Kurdistan, Iran. From 2010 to 2012.

♣ Proposals

- ✓ Study cytotoxic effects of the derivatives from 4-aryl-4H-chromene family on human leukemia K562 cells Funding Organization:Azad University
  start:2010/05/10 End:2011/05/10
- ✓ Study of toxicity effects of silver nanoparticles on brain tubulin and human central nervous cell line SK-N-MC Funding Organization: Azad University
  start:2011/10/12 End:2012/10/12
- ✓ Identification of new inhibitors of tubulin from marine resources using In Silico, synthesis and evaluation of anticancer properties In Vitro Funding Organization: Bushehr University of Medical Sciences
  start:2015/09/23 End:2017/03/19
- ✓ Identification of new natural Inhibitors of K-Ras, as one of the main master switch in cancer therapy using In Silico method and study the effects of them on SW-480 and SK-N-MC cancer cell lines In Vitro Funding Organization: Ministry of Science, Research and Technology
  start:2016/04/21 End:2018/04/21

♣ Research Interests

- ✓ Structural Biology, Medicinal Chemistry, Computational Drug Discovery and Design
- ✓ Computational Molecular Biology

♣ Honors & Awards

- ✓ First rank of biochemistry in M.Sc. entrance examination 2001
- ✓ Third rank in the National Biology Olympiad 2001

♣ Patents

- ✓ Saffari, Z., Aryapour H., Akbarzadeh A., Foroumadi A., Jafari N., Farahnak Zarabi M., Farhangi A. Cytotoxicity Inducing Activities of 2-Amino-4H-chromene-3-carbonitrile Derivatives Loaded on Gold Nanoparticles Against Human Breast Cancer Cell Lines T47D and MCF-7, 1393, Iran Patent No. 85358.

♣ References

1. **Prof. Riazi, G.H. : PhD of Biochemistry**

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