

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Zahra Hajimahdi

Title: Associate Professor

Qualification: Pharm.D., Ph.D in Medicinal Chemistry

Nationality: Iranian

Marital status: Married

Date of birth: September 21, 1983

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EDUCATION

1-Pharm.D (Shahid Beheshti University of Medical Sciences, Tehran, Iran, 2001-2007)

2-Ph.D in Medicinal Chemistry (Shahid Beheshti University of Medical Sciences, Tehran, Iran, 2007-2013)

WORK EXPERIENCE:

Assistant Professor of Medicinal and Pharmaceutical Chemistry, Shahid Beheshti University of Medical Sciences, Tehran/Iran (2014 to 2021)

Associate Professor of Medicinal and Pharmaceutical Chemistry, Shahid Beheshti University of Medical Sciences, Tehran/Iran (2021 to date)

AWARDS:

Top student in pharmacy doctorate over a five-year period (2001-2007)

4th place in 21th national pharmacy comprehensive Examination of basic sciences, 2004

1st place in national PhD entrance exam of medicinal chemistry (2007)

1st place in PhD board exam in medicinal chemistry (2010)

RESEARCH INTERESTS:

- Structure-based and ligand-based drug design and discovery
- Design and synthesis of HIV-1 integrase inhibitors
- Design and synthesis of HIV-1 RNase H inhibitors
- Design and synthesis of Glycogen synthase kinase 3 (GSK-3) inhibitors
- Quantitative structure activity relationship studies (2D-QSAR, 3-D-QSAR)
- Virtual screening and pharmacophore researches

PUBLICATIONS

1- Zarghi, A., **Hajimahdi, Z.**, Mohebbi, Sh., Rashidi, H., Mozaffari, S., Sarraf, S., Faizi, M., Tabatabaie, S.A., Shafiee, A. Design and Synthesis of New 2-Substituted-5-[2-(2-halobenzyloxy) phenyl]-1,3,4-oxadiazoles as Anticonvulsant Agents. *Chemical & pharmaceutical bulletin* (2008) 56: 509-512.

2- **Hajimahdi, Z.**, Zarghi, A., Zabihollahi, R., Aghasadeghi, M. R. Synthesis, biological evaluation and molecular modeling studies of new 1,3,4-oxadiazole and 1,3,4-thiadiazole substituted 4-oxo-4*H*-pyrido[1,2-*a*]pyrimidines as anti-HIV-1 agents. *Medicinal Chemistry Research* (2013) 22: 2467-2475

3- **Hajimahdi, Z.**, Zabihollahi, R., Aghasadeghi, M. R., Zarghi, A., Design, synthesis and docking studies of new 4-hydroxyquinoline-3-carbohydrazide derivatives as anti-HIV-1 agents. *Drug Research* (2013) 63: 192–197

4- Zarghi, A. and **Hajimahdi, Z.** Substituted oxadiazoles: a patent review (2010-2012). *Expert Opinion on Therapeutic Patents* (2013) 23 (9), pp. 1209-1232

- 5- Zarghi, A., Sabakhi, I., Topuzyan, V., **Hajimahdi, Z.**, Daraie, B. Design, Synthesis and Biological Evaluation of 5-Oxo-1,4,5,6,7,8 Hexahydroquinoline Derivatives as Selective Cyclooxygenase-2 Inhibitors. *Iranian Journal of Pharmaceutical Research* (2014) 13 (Supplement), pp. 61-69
- 6- **Hajimahdi, Z.**, Ranjbar, A., Suratgar AA., Zarghi, A. QSAR Study on Anti-HIV-1 Activity of 4-Oxo-1,4-dihydroquinoline and 4-Oxo-4H-pyrido[1,2-a]pyrimidine Derivatives Using SW-MLR, Artificial Neural Network and Filtering Methods. *Iranian Journal of Pharmaceutical Research* (2015) 14 (Supplement), pp. 69-75.
- 7- Sabakhi, I., Topuzyan, V., **Hajimahdi, Z.**, Daraie, B., Arefi, H., Zarghi, A. Design, Synthesis and Biological Evaluation of new 1, 4-Dihydropyridine (DHP) Derivatives as Selective Cyclooxygenase-2 Inhibitors. *Iranian Journal of Pharmaceutical Research* (2015), 14 (4): 1087-1093
- 8- **Hajimahdi, Z.**, Safizadeh, F., Zarghi, A. QSAR Analysis for Some 1,2-Benzisothiazol-3-one derivatives as Caspase-3 Inhibitors by Stepwise MLR Method. *Iranian Journal of Pharmaceutical Research* (2016), 15(2): 439-448
- 9- **Hajimahdi, Z.**, Zabihollahi, R., Aghasadeghi, M. R., Hosseini Ashtiani, S., Zarghi, A.. Novel quinolone-3-carboxylic acid derivatives as anti-HIV-1 agents: design, synthesis, and biological activities. *Medicinal Chemistry Research* (2016) 25(9), pp. 1861-1876.
- 10-**Hajimahdi, Z.** Small Molecules as Protein-Protein Interaction Inhibitors. *Iranian Journal of Pharmaceutical Research* (2016) 15 (Special issue): 1-2.
- 11- **Hajimahdi, Z.**, Zarghi, A. and Progress in HIV-1 integrase inhibitors: A review of their chemical structure diversity. *Iranian Journal of Pharmaceutical Research* (2016) 15(4), pp. 595-628.
- 12- Akbari, S., Zebardast, T., Zarghi, A., **Hajimahdi, Z.** QSAR Modeling of COX-2 Inhibitory Activity of Some Dihydropyridine and Hydroquinoline Derivatives Using Multiple Linear Regression (MLR) Method. *Iranian Journal of Pharmaceutical Research* (2017) 16 (2): 525-532.
- 13- Golbabaie N, Zabihollahi R, **Hajimahdi Z**, Zarghi A, Amiran MR, Aghasadeghi MR. Effect of anti-HIV activity of novel compounds 8-phenyl-4-quinolone containing different substituents at position 3. *Journal of Gorgan University of Medical Sciences* (2017) 19(2): 83. [Article in Persian]

- 14- Safakish M, **Hajimahdi Z**, Zabihollahi R, Aghasadeghi MR, Vahabpour R, Zarghi A. Design, synthesis, and docking studies of new 2-benzoxazolinone derivatives as anti-HIV-1 agents. *Medicinal Chemistry Research* (2017) 26 (11): 2718-2726.
- 15- Faraji N, Zebardast T, Zarghi A, **Hajimahdi Z**. QSAR Modeling of Aminopeptidase N/CD13 (APN) Inhibitory Activity of some Leucine Ureido Derivatives by GA-MLR and SW-MLR Methods. *Letters in Drug Design & Discovery* (2017)14 (12), 1348-1357.
- 16- Mosayebnia M, Rezaeianpour S, Rikhtechi P, **Hajimahdi Z**, Beiki D, Kobarfard F. Novel and Efficient Method for Solid Phase Synthesis of Urea-Containing Peptides Targeting Prostate Specific Membrane Antigen (PSMA) in Comparison with Current Methods. *Iranian Journal of Pharmaceutical Research: IJPR* (2018) 17 (3), 917-926.
- 17- Parizadeh N, Alipour E, Soleymani S, Zabihollahi R, Aghasadeghi MR, **Hajimahdi Z**, Zarghi A. Synthesis of Novel 3-(5-(Alkyl/arylthio)-1,3,4-Oxadiazol-2-yl)-8-Phenylquinolin-4(1H)-One Derivatives as Anti-HIV Agents. *Phosphorus, Sulfur, and Silicon and the Related Elements* (2018) 193 (4), 225-231
- 18- Dowlati Beirami A, **Hajimahdi Z**, Zarghi A. Docking-Based 3D-QSAR (CoMFA, CoMFA-RG, CoMSIA) Study on Hydroquinoline and Thiazinan-4-one Derivatives as Selective COX-2 Inhibitors. *Journal of Biomolecular Structure and Dynamics* (2019) 37(11), pp. 2999-3006.
- 19- Faraji N, **Hajimahdi Z**. Synthesis, characterisation, and antimicrobial activity of ZnO-based nanocomposites. *Micro & Nano Letters* (2018) 13(12), pp. 1667-1671.
- 20- Akbarpour Avini S, Zebardast T, **Hajimahdi Z**, Zarghi A. QSAR Modeling of COX-2 Inhibitory Activity of Thiazinan, Benzthiazinan, and Benzdiazinan Derivatives. *International Pharmacy Acta* (2018) 2:190-197.
- 21- Livani ZA, Safakish M, **Hajimahdi Z**, Soleymani S, Zabihollahi R, Aghasadeghi MR, Alipour E, Zarghi A. Design, synthesis, molecular modeling, in silico ADME studies and anti-HIV-1 assay of new diazocoumarin derivatives. *Iranian Journal of Pharmaceutical Research: IJPR* (2018) 17(special issue 2), 65-77.
- 22- Faghihi K, Safakish M, Zebardast T, **Hajimahdi Z** and Zarghi A. Molecular Docking and QSAR Study of 2-Benzoxazolinone, Quinazoline and Diazocoumarin Derivatives as Anti-HIV-1 Agents. *Iranian Journal of Pharmaceutical Research: IJPR* (2019): 18 (3): 1253-1263.
- 23- **Hajimahdi, Z**, Zabihollahi R, Aghasadeghi MR, Zarghi A. Design, Synthesis, Docking Studies and Biological Activities Novel 2,3- Diaryl-4-Quinazolinone Derivatives as Anti-HIV-1 Agents. *Current HIV Research*, (2019) 17 (3), 214-222

- 24- Safakish M, **Hajimahdi, Z**, Vahabpour R, Zabihollahi R, Zarghi A. Novel benzoxazin-3-one derivatives: Design, synthesis, molecular modeling, anti-HIV-1 and integrase inhibitory assay. *Medicinal Chemistry*, Volume 16, Issue 7, 2020, Pages 938-946.
- 25- Ebrahimzadeh E, Tabatabai SA, Vahabpour R, **Hajimahdi, Z**, Zarghi A. Design, Synthesis, Molecular Modeling Study and Biological Evaluation of New N'-arylidene-pyrido[2,3-d]pyrimidine-5-carbohydrazide Derivatives as Anti-HIV-1 Agents. *Iranian Journal of Pharmaceutical Research: IJPR* (2019) 18 (Special Issue): 237-248.
- 26- Mahboubi Rabbani SIM, Vahabpour R, **Hajimahdi Z**, Zarghi A. Design, Synthesis, Molecular Modeling Studies and Biological Evaluation of N'-Arylidene-6-(benzyloxy)-4-oxo-1,4-dihydroquinoline-3-carbohydrazide Derivatives as Novel Anti-HCV Agents. *Iranian Journal of Pharmaceutical Research: IJPR* (2019) 18 (4): 1790.
- 27- Mosayebnia M, **Hajimahdi Z**, Beiki D, Rezaeianpour M, Hajiramezanali M, Geramifar P, Amini M, Hatamabadi D, Shahhosseini S. Design, synthesis, radiolabeling and biological evaluation of new urea-based peptides targeting prostate specific membrane antigen. *Bioorganic Chemistry* (2020) 103743.
- 28- Safakish M, **Hajimahdi Z**, MR Aghasadeghi, R Vahabpour, A Zarghi. Design, Synthesis, Molecular modeling and Anti-HIV Assay of novel Quinazolinone Incorporated Coumarin Derivatives. *Current HIV research* (2020) 18(1), pp. 41-51.
- 29- Elnaz Ebrahim Zadeh, Rouhollah Vahabpour, Amirreza Dowlati Beirami, **Zahra Hajimahdi*** and Afshin Zarghi*. Novel 4-Oxo-4,10-dihydrobenzo[4,5]imidazo[1,2-a]pyrimidine-3-carboxylic Acid Derivatives as HIV-1 Integrase Inhibitors: Synthesis, Docking studies, Molecular Dynamics Simulation and Biological Activities. *Medicinal Chemistry* (2021), 17 (9), 1060-1071.
- 30- Ali Imani, Sepehr Soleymani, Roholah Vahabpour Roudsari, **Zahra Hajimahdi***, Afshin Zarghi*. Design, Synthesis, Docking Study and Biological Evaluation of 4-Hydroxy-2H-benzo[e][1,2]thiazine-3-carboxamide 1,1-dioxide Derivatives as Anti-HIV Agents. *Iranian Journal of Pharmaceutical Research* (2021), 20 (3): 1-12.
- 31- Nafiseh Karimi, Rouhollah Vahabpour Roudsari, Mahsa Azami Movahed, **Zahra Hajimahdi** and Afshin Zarghi. 4-(1-Benzyl-1H-benzo[d]imidazol-2-yl)-4-oxo-2-butenoic Acid Derivatives: Design, Synthesis and Anti-HIV-1 Activity. *Iranian Journal of Pharmaceutical Research* (2021), 20 (1): 408-417
- 32- Ali Imani, Sepehr Soleymani, Rouhollah Vahabpour, **Zahra Hajimahdi**, Afshin Zarghi. Piroxicam Analogs: Design, Synthesis, Docking Study and Biological Evaluation as Promising Anti-HIV-1 agents. *Medicinal Chemistry* (2022), 18 (2), 209-219
- 33- Mohammad Mahboubi-Rabbani, Maryam Abbasi, **Zahra Hajimahdi** and Afshin Zarghi.. HIV-1 Reverse Transcriptase/Integrase Dual Inhibitors: A Review of Recent Advances and

Structure-activity Relationship Studies. Iranian Journal of Pharmaceutical Research (2021), 20 (2): 333-369.

34-Nafiseh Karimi, Rouhollah Vahabpour Roudsari, **Zahra Hajimahdi** and Afshin Zarghi*. Design, Synthesis, and Docking Studies of Thioimidazolyl Diketoacid Derivatives Targeting HIV-1 Integrase. Medicinal Chemistry (2022), 18 (5):616-628

35-Omid Abdollahi, Arash Mahboubi, **Zahra Hajimahdi**, Afshin Zarghi. Design, Synthesis, Docking Study, and Biological Evaluation of 4-hydroxy-2-oxo-1, 2-dihydroquinoline-3-carbohydrazide Derivatives as Anti-HIV-1 and Antibacterial Agents. Iran J Pharm Res. 2022 December; 21(1):e126562.

36- Mehrdad Alemi, Fatemeh Kamali, Rouhollah Vahabpour Roudsari, **Zahra Hajimahdi**, Afshin Zarghi. Synthesis, biological evaluation, and molecular modeling studies of new 8-methyl-4-oxo-1, 4-dihydroquinoline-3-carbohydrazides as potential anti-HIV agents. Iran J Pharm Res. 2022 December; 21(1):e123962.

37- Mehrnaz Lotfaliei, Elham Rezaee, Zahra Hajimahdi, Mohammad Mahboubi Rabbani, Rezvan Zabihollahi, Mohammad Reza Aghasadeghi, Sayyed Abbas Tabatabai. Novel 2-(Diphenylmethylidene) Malonic Acid Derivatives as Anti-HIV Agents: Molecular Modeling, Synthesis and Biological Evaluation. Iran J Pharm Res. 2022 December; 21(1):e123827.

38- Tannaz Zebardast, Nasrin Mostafavi, Sahra Sharifi, Nafiseh Karimi, Rouhollah Vahabpour Roudsari, **Zahra Hajimahdi***, Afshin Zarghi. Design, Synthesis and Docking studies of New Quinazolinone Derivatives as Anti-HIV-1 Agents. Iranian Journal of Pharmaceutical Sciences (2022), 18 (1): 55-64.

PRESENTATIONS

1- **Zahra Hajimahdi**, Afshin Zarghi. Design and Synthesis of Oxadiazole Derivatives as New Benzodiazepine Receptor Ligands, In the First Seminar of Medicinal and Natural Products Chemistry, May 10-11, 2005, Shiraz, Iran (poster presentation).

2- **Zahra Hajimahdi**, Afshin Zarghi. In the 10th Iranian Pharmaceutical Sciences Conference (IPSC 2006), August 21-24 2006, Tehran, Iran (poster presentation).

3- **Zahra Hajimahdi**, Afshin Zarghi. Design and Synthesis of New Triazole Derivatives as Anticonvulsant Agents, In the 11th Iranian Pharmaceutical Sciences Conference (IPSC2008), August 2008, Kerman, Iran (poster presentation).

4- **Zahra Hajimahdi**, Afshin Zarghi, Rezvan Zabihollahi, Mohammad Reza Aghasadeghi. Quinolone-3-carboxylic acid derivatives: Design, docking studies and synthesis as novel anti-HIV agents. 3rd international Bau drug design congress, October 1-3 2015, Istanbul, Turkey (poster presentation).

5- **Zahra Hajimahdi**, Afshin Zarghi. Inhibiting the HIV integration process: a novel approach for designing effective anti-HIV agents. 14th Iranian Pharmaceutical Sciences Conference (IPSC 2015), December 21-24 2015, Tehran, Iran (oral presentation)

6- **Zahra Hajimahdi**, Afshin Zarghi. Prediction of anti-HIV activities of 4-quinolone and pyrido[1,2-a]pyrimidinone derivatives by multilinear regression analysis and artificial neural network. 14th Iranian Pharmaceutical Sciences Conference (IPSC 2015), December 21-24 2015, Tehran, Iran (poster presentation).

7- **Zahra Hajimahdi**, Afshin Zarghi. Anti-HIV-1 activity assay and docking studies of some novel 6-aryl-4-quinolone-3-carboxylic acid derivatives. 4th Annual International Conference on Pharmacology and Pharmaceutical Sciences (PHARMA2016), 26-27 September 2016, Singapore (oral presentation).

8- **Zahra Hajimahdi**. Second International Peptide conference & Humboldt-Kolleg. 8-9 January, 2017, Tehran.

9- **Zahra Hajimahdi**. Protein-Protein Interaction as a New Strategy to Inhibit HIV-1 Integrase. The 3rd international congress on pharmacy updates. 5-8 February 2020, Tehran, Iran (oral presentation)

Supervisor and advisers:

Master D thesis (10 items)
Pharm D thesis (30 items)
Ph. D Thesis (11 items)

Research Projects:

- 1- QSAR analysis for some Caspase-3 inhibitors by 2D and 3D methods (2014-2015)
- 2- Three-dimensional quantitative structure activity relationship studies on HIV integrase inhibitors using CoMFA and CoMSIA (2013 to date)
- 3- Design, molecular modeling and synthesis of novel compounds as anti-HIV agents (2010 to date)
- 4- Design, molecular modeling and synthesis of novel compounds as GSK-3 inhibitors (2020 to date)

5- Design, molecular modeling and synthesis of novel PSMA inhibitors as anticancer agents (2015 to date)