

# Hayarpi Mantash Simonyan

## Institute of Pharmacy

Ֆարմաբիոտեխնոլոգիայի և ֆարմակոգնոզիայի ամբիոն  
Ամբիոնի վարիչ (դոցենտ)

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(060) 71-04-11

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🌐 R<sup>6</sup>

## 🎓 Education

<b>Institution</b>	Yerevan State University
<b>Faculty</b>	Faculty of Chemistry
<b>Date</b>	2001 - 2006
<b>Degree name</b>	Qualified specialist

## 🎓 Scientific Rank/degree

<b>Institution</b>	Yerevan State University
<b>Date</b>	2014
<b>Degree name</b>	Candidate
<b>Specialty</b>	Chemical sciences
<b>Scientific Supervisor</b>	Ashot Saghyan
<b>Research Topic</b>	Biomimetic asymmetric synthesis of new heterocyclic substituted non-proteinogenic $\alpha$ -amino acids

## 🌐 Language skills

English Русский

## 📁 Work experience

<b>Institution</b>	EU4INNOVATION project, World Bank Armenia
<b>Period of time</b>	2019 - 2022
<b>Rank/degree</b>	Chemistry Expert

<b>Institution</b>	YSU Institute of Pharmacy, Chair of Pharmaceutical Chemistry and Pharmacognosy
<b>Period of time</b>	2017 till now
<b>Rank/degree</b>	Head of the Chair

<b>Institution</b>	Araratian Baccalaureate Examination Center
<b>Period of time</b>	2016 - 2018
<b>Rank/degree</b>	Chemistry subject specialist,

**Institution** YSU Institute of Pharmacy  
**Period of time** 2014 - 2017  
**Rank/degree** Assistant professor

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**Institution** YSU Institute of Pharmacy  
**Period of time** 2014 till now  
**Rank/degree** Senior researcher

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**Institution** Scientific and Production Center "Armbiotechnology" NAS RA  
**Period of time** 2007 - 2019  
**Rank/degree** Junior Researcher

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**Institution** YSU Faculty of Chemistry  
**Period of time** 2006 - 2014  
**Rank/degree** Junior Researcher

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## Scientific interests

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- Asymmetric synthesis of non protein amino acids
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## Participation in international conferences and seminars

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**22/07/2022 - 03/08/2022** Scientific Collaboration  
Institute of Biostructures and Bioimaging (IBB) of the National Research Council (CNR)  
Italy

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**18/02/2020 - 21/02/2020** Discussion of joint educational programs  
Peoples' Friendship University of Russia, Belgorod State National Research University of RF  
Russian Federation (the)

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**01/09/2019 - 05/09/2019** VIII EFMC International Symposium on Advances in Synthetic and Medicinal Chemistry  
Athens  
Greece

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**08/07/2018 - 13/07/2018** 16th Belgian Organic Synthesis Symposium  
Brusseles  
Belgium

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**24/07/2017 - 26/07/2017** 5th International Conference of Green chemistry and Technology  
Rome  
Italy

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<b>03/08/2015 - 07/08/2015</b>	14th International Congress on Amino Acids, Peptides and Proteins Vienna Austria
<b>29/07/2014 - 31/07/2014</b>	International Congress on Green Chemistry and Sustainable Engineering Barcelona Spain
<b>09/10/2013 - 13/10/2013</b>	11th International Congress of Young Chemists Poznan Poland
<b>17/09/2013 - 21/09/2013</b>	3th International Scientific Conference "New trends in the chemistry of heterocyclic compounds", Pyatigorsk Russian Federation (the)
<b>17/05/2013 - 19/05/2013</b>	3-rd International Conference of Young Scientists Tbilisi Georgia
<b>12/11/2012 - 16/11/2012</b>	6th International conference "Chemistry of Nitrogen Containing Heterocycles" Kharkov Ukraine
<b>21/04/2012 - 23/04/2012</b>	Second International Conference of Young Chemists Tbilisi Georgia

## Membership

<b>Institution</b>	Member of the Association of Young Chemists
<b>Period of time</b>	2013 - 2023
<b>Institution</b>	Member of RA "Armenian Association of Biotechnologists" public organization
<b>Period of time</b>	2014 - 2023
<b>Institution</b>	Member of the Scientific Council of YSU Institute of Pharmacy
<b>Period of time</b>	2015 - 2023

## State awards and honorary titles

2015 State prize in the field of exact and natural sciences for the work "Efficient small-scale production technology of new generation non-protein amino acids"

*Article*

**Binding of G-quadruplex DNA and serum albumins by synthetic non-proteinogenic amino acids: Implications for c-Myc-related anticancer activity and drug delivery**

Hayarpi Simonyan, Satenik Petrosyan, Lusine Sahakyan, Gagik Melikyan, Ashot Sagyan,

Rosanna Palumbo, Caterina Vicidomini, Pasqualina Liana Scognamiglio, Giovanni N. Roviello

Molecular Therapy Nucleic Acids 2025 102478

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*Article*

**Neuroprotective Properties of Clove (*Syzygium aromaticum*): State of the Art and Future Pharmaceutical Applications for Alzheimer's Disease**

Tatevik Sargsyan, Hayarpi Simonyan, Avetis Tsaturyan, Lala Stepanyan, Raffaele Pastore,

Caterina Vicidomini, Germano Guerra, Giovanni N. Roviello

Biomolecules 2025 452

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*Article*

**The Synthesis, Characterization, and Biological Evaluation of a Fluorenyl-Methoxycarbonyl-Containing Thioxo-Triazole-Bearing Dipeptide: Antioxidant, Antimicrobial, and BSA/DNA Binding Studies for Potential Therapeutic Applications in ROS Scavenging and Dr**

Lala Stepanyan, Tatevik Sargsjan, Valentina Mittova, Zurab Tsetskhladze, Nino Motsonelidze,

Ekaterina Gorgoshidze, Niccolo Nova, Monika Israyelyan, Hayarpi Simonyan, Franco Bisceglie,

Lusine Sahakyan, Karapet Ghazaryan, Giovanni Roviello

Biomolecules 2025 933

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*Article*

**Biomacromolecular interactions and antioxidant properties of novel synthetic amino acids targeting DNA and serum albumin**

Tatevik Sargsyan, Heghine Hakobyan, Hayarpi Simonyan, Tigran Soghomonyan, Avetis Tsaturyan,

Anahit Hovhannisyan, Siranush Sardaryan, Ashot Saghyan, Giovanni N. Roviello

Journal of Molecular Liquids 2025 1-13

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*Article*

**BSA Binding and Aggregate Formation of a Synthetic Amino Acid with Potential for Promoting Fibroblast Proliferation: An In Silico, CD Spectroscopic, DLS, and Cellular Study**

Hayarpi Simonyan, Rosanna Palumbo, Satenik Petrosyan, Anna Mkrtchyan, Armen Galstyan,

Ashot Saghyan, Pasqualina Liana Scognamiglio, Caterina Vicidomini, Marta Fik-Jaskólka,

Giovanni N. Roviello

Biomolecules 2024 579

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*Article*

**Advances in Amino Acid-Based Chemistry**

Hayarpi Simonyan, Rosanna Palumbo, Giovanni N. Roviello

Pharmaceuticals 2023 1490

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*Article*

**Asymmetric Synthesis of Derivatives of Alanine via Michael Addition Reaction and their Biological Study**

Mkrtchyan Anna, Tovmasyan Anna, Paloyan Ani, Sargsyan Armen, Simonyan Hayarpi, Sahakyan Lusine,

Petrosyan Satenik, Hayriyan Liana, Sargsyan Tatevik  
Synlett 2022 2013-2018

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Article

**Spectroscopic and SEM evidences for G4-DNA binding by a synthetic alkyne-containing amino acid with anticancer activity**

Marta A.Fik-Jaskółka, Anna F.Mkrtchyan, Ashot S.Saghyan, Rosanna Palumbo, Agnieszka Belter,  
Liana A.Hayriyan, Hayarpi Simonyan, ValentinaRoviello, Giovanni N.Roviello

SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY 2020 117884

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Article

**Biological macromolecule binding and anticancer activity of synthetic alkyne-containing L-phenylalanine derivatives**

Marta A. Fik-Jaskółka, Anna F. Mkrtchyan, Ashot S. Saghyan, Rosanna Palumbo, Agnieszka Belter,  
Liana A. Hayriyan, Hayarpi Simonyan, Valentina Roviello, Giovanni N. Roviello

Amino Acids 2020 755-769

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Article

**Исследование асимметрического нуклеофильного бис-присоединения дегидроаланиновых комплексов Ni(II)**

Петросян С. Г., Симонян А. М, Мкртчян А. Ф., Саакян Л. Ю., Цатурян А. О., Сагян А. С.

Հայաստանի քիմիական հանդես 2020 213-222

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Manual

**Ամինաթթուների ֆիզիկաքիմիական, օպտիկական հատկությունները և ստացման եղանակները**  
Հ.Մ. Սիմոնյան, Ա.Ֆ. Մկրտչյան

2018 40

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Manual

**ՊԵՊՏԻԴՆԵՐ, ՖԵՐՄԵՆՏՆԵՐ**

Ա. Ֆ. Մկրտչյան, Հ.Մ. Սիմոնյան

2018 36

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Article

**Synthesis and biological evaluation of a novel Amadori compound**

Hayarpi Simonyan, Giovanni N. Roviello, Roberta Iannitti, Valentina Roviello, Rosanna Palumbo,

Caterina Vicidomini

Amino Acids 2017 327-335

<http://link.springer.com/journal/726>

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Article

**Асимметрический синтез новых гетероциклически замещенных аналогов α-аминомасляной кислоты, содержащих замещенные триазольные группы в боковом радикале**

А.С.Сагян, Л.Ю.Саакян, А.М.Симонян, С.Г.Петросян, А.Ф.Мкртчян, М.А.Самвелян, Т.В.Кочикян,

П.Лангер

Химический Журнал Армении 2017 71-81

<http://www.flib.sci.am/eng/Qimia/Frame.html>

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Article

**Асимметрический синтез новых гетероциклически замещенных аналогов (S)- $\alpha$ -аланина, содержащих 3,4-дизамещенные -5-тиоксо-1,2,4-триазолы в боковом радикале**

А.М.Симонян, А.С.Сагиян, Л.Ю.Саакян, Н.Н.Багян, А.О.Восканян, Ж.Н.Сарибекян, М.А.Самвелян,

Т.В.Кочикян

Химический Журнал Армении 2017 82-91

<http://www.flib.sci.am/eng/Qimia/Frame.html>

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Article

**Lac-L-TTA, a novel lactose-based amino acid-sugar conjugate for anti-metastatic applications**

Hayarpi Simonyan, Giovanni N. Roviello, Roberta Iannitti, Rosanna Palumbo, Caterina Vicidomini,

Valentina Roviello

Amino Acids 2017 1347-1353

<http://link.springer.com/journal/726>

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Article

**Асимметрический синтез (S)-b-(4-(b-фенэтил)-3-бутил-5-тиоксо-1,2,4-триазол-1-ил)- $\alpha$ -аланина**

А.М. Симонян

Հայաստանի քիմիական հանդես 2017 522-528.

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Article

**ВЫДЕЛЕНИЕ ПРОЛИНА ИЗ СМЕСИ АМИНОКИСЛОТ**

А.М. Симонян, А.С. Сагян, Ж.Н. Сарибекян, А.Е. Агаджанян

Հայաստանի քիմիական հանդես 2017 417-429

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Article

**New generations of optically active non-proteinogenic  $\alpha$ -amino acids, synthesis and study**

Hovhannisyan A. M., Saghyan A. S., Mkrtchyan A. F., Simonyan H. M

Հայաստանի քիմիական հանդես 2016 81-101

<http://www.flib.sci.am/eng/Qimia/Frame.html>

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Article

**Synthesis of enantiomerically enriched amino acids containing acetylenic bond in the side-chain radical**

Hayarpi M. Simonyan, Ashot. S. Saghyan, Anna F. Mkrtchyan, Ani J. Karapetyan, Zorayr Z. Mardiyan,

Liana A. Hayriyan

International Journal of Chemical Engineering and Applications 2016 413-416

<http://www.ijcea.org/>

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Article

**Синтез положительно заряженных комплексов CoIII и их исследование в качестве хиральных катализаторов в реакциях асимметрического генерирования С-С связи.**

Мкртчян А. Ф., Геолчанян А. В., Симонян А. М., Петросян С. Г., Сагиян А. С., Малеев В. И.,

Белоконь Ю. Н., Хрусталев В. Н

Химический Журнал Армении 2015 108-121

<http://www.flib.sci.am/eng/Qimia/Frame.html>

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Article

**АСИММЕТРИЧЕСКИЙ СИНТЕЗ НОВЫХ ЭНАНТИОМЕРНО ОБОГАЩЕННЫХ НЕНАСЫЩЕННЫХ**

## **α-АМИНОКИСЛОТ**

А. Ф. МКРТЧЯН, З. З. МАРДИЯН, А. Ж. КАРАПЕТЯН, А. С. ПОГОСЯН, С. Г. ПЕТРОСЯН, А. М. СИМОНЯН,  
А. О. ЦАТУРЯН, А. С. САГИЯН

Химический Журнал Армении 2015 403-412

<http://www.flib.sci.am/eng/Qimia/Frame.html>

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### *Article*

#### **Thiophenyl-substituted triazolyl-thione L-alanine: asymmetric synthesis, aggregation and biological properties**

Ashot S. Saghyan, Hayarpi M. Simonyan, Petrosyan G. Satenik, Arpine V. Geolchanyan,

Giovanni N. Riovello, Domenica Musumeci, Valentina Roviello

Amino Acids 2014 2325–2332

<http://link.springer.com/journal/726>

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### *Conference*

#### **Asymmetric synthesis of new enantiomerically enriched α-amino acids**

A.S. Saghyan, A.F. Mkrtchyan, S.G. Petrosyan, J.A. Yedoyan, A.M. Simonyan, A.V. Geolchanyan,

P. Langer, A.M. Petrosyan

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### *Conference*

#### **Metallocomplex precursors for the synthesis of 18f-fluorinated aromatic amino acids labelled in alpha fluoromethyl moiety**

A. V. Geolchanyan, A. S. Saghyan, A. F. Mkrtchyan, S. G. Petrosyan, H. M. Simonyan, V. I. Maleev,

Yu. N. Belokon, R. Schibli, R. N. Krasikova

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### *Conference*

#### **Efficient method for the synthesis of novel enantiomerically enriched derivatives of propargylglycine**

Anna F. Mkrtchyan, Ashot S Saghyan, Liana A Hayriyan, Ani J Karapetyan, Zorayr Z Mardiyan,

Hayarpi M Simonyan, Adonc Hovhannes

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### *Conference*

#### **Asymmetric synthesis of potential biologically active new heterocyclic analogs of (S)-α - alanine containing 3,4-substituted 5-thioxo-1,2,4- triazoles in the side-chain radical**

H.M. Simonyan, L.Yu. Sahakyan, S.Gh. Petrosyan, A.F. Mkrtchyan, N.N. Baghyan,, J.N. Saribekyan,

A.S. Saghyan

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### *Conference*

#### **Asymmetric synthesis of new heterocyclic analogs of alpha-aminopropionic acid and alpha-aminobutyric acid via Michael nucleophilic addition reactions**

Hayarpi Simonyan, Lusine Sahakyan, Anna Mkrtchyan, Satenik Petrosyan, Ashot Saghyan

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### *Conference*

#### **Efficient method for the synthesis of novel enantiomerically enriched derivatives of unsaturated amino acids**

Ashot Saghyan, Anna Mkrtchyan, Liana Hayriyan, Zorayr Mardiyan, Hayarpi Simonyan

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### *Conference*

#### **Asymmetric synthesis of enantiomerically enriched analog of α-aminobutyric acid containing**

**heterocycle in the side chain radical .**

L.Yu.Sahakyan, A.S. Saghyan, H.M. Simonyan, S.Gh.Petrosyan, A.F.Mkrtchyan

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*Conference*

**Asymmetric synthesis and biological activity of novel heterocycle substituted analogues of  $\alpha$ -aminobutyric acid**

Sahakyan L.Yu., Simonyan H. M, Petrosyan S. Gh., Mkrtchyan A. F., Simonyan M. A., Saghyan A. S.,

Sekoyan E. S.

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*Conference*

**Asymmetric synthesis of potential biologically active new analogs of (S)-alanine containing nitrogenous bases in the side-chain radical**

H.M.Simonyan, L.Yu. Sahakjan, A.F.Mkrtchyan, S.Gh.Petrosyan, N.N.Baghyan, A.O.Voskanyan,

J.N.Saribekyan, A.S.Saghyan

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*Conference*

**Асимметрический синтез новых производных (S)- $\alpha$ -аланина, содержащих 3-замещенные 4-изобутил-5-тиоксо-1,2,4-триазолы в боковом радикале**

А.М.Симонян, Н.Н.Багян, А.О.Восканян, Ж.Н.Сарибекян, Л.Ю.Саакян, А.Ф.Мкртчян, С.Г.Петросян,

А.С.Сагиян

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*Conference*

**Asymmetric synthesis of enantiomerically enriched analogs of NiII complexes of (S)-allylglycine**

L.A.Hayriyan, A.F.Mkrtchyan, Z.Z.Mardiyanyan, A.J.Karapetyan, H.V. Adonc, H.M. Simonyan, S.Gh. Petrosyan,

L.Yu.Sahakyan, A.S. Saghyan

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*Conference*

**Synthesis of optically pure (S)-2-amino-5-(3-fluorophenyl)-2-(prop-2-yn-1-yl)pent-4-ynoic acid by using Sonogashira reaction**

Z.Z. Mardiyanyan, L.A. Hayriyan, A.F.Mkrtchyan, A.X.Tsaturyan, A.J. Karapetyan, H.V. Adonc, H.M. Simonyan,

S.Gh.Petrosyan, L.Yu.Sahakyan, A.S. Saghyan

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*Conference*

**Asymmetric synthesis of enantiomerically enriched new analogs of Ni II complexes of (S)-propargylglycine**

L. Hayriyan, A. Saghyan, H. Simonyan, A. Karapetyan, Z. Mardiyanyan, A. Mkrtchyan

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*Conference*

**Asymmetric synthesis of optically active derivatives of  $\alpha$ -aminobutyric acid containing triazole groups in the side chain radical**

L.Sahakyan, H.Simonyan, S. Petrosyan, A. Mkrtchyan, A. Saghyan, E. Sekoyan

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*Conference*

**SYNTHESIS OF A NOVEL HETEROCYCLIC AMINO ACID AND ITS USE FOR THE SYNTHESIS OF SUGAR-AMINO ACID CONJUGATES**

Hayarpi Simonyan, Giovanni Roviello, Anna Mkrtchyan, Lusine Sahakyan, Satenik Petrosyan,

Ashot Saghyan

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*Conference*

**Synthesis and Biological Evaluation of Unusual Alpha-amino Acids for Biomedical Strategies**

Hayarpi Simonyan, Giovanni N. Roviello, Ernest Ewert, Marta Fik-Jaskółka, Anna Mkrtchyan

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*Conference*

**DEVELOPMENT OF NOVEL PEPTIDE-MIMETIC COMPOUNDS AS POTENTIAL ANTICANCER**

**AGENTS: A COLLABORATIVE POLISH-ITALIAN-ARMENIAN STUDY**

Danuta Witkowska, Giovanni N. Roviello, Agnieszka Rombel-Bryzek, Paweł Lenartowicz,

Hayarpi Simonyan

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