

# Lusine Hovhannes Melkonyan

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## Institute of Pharmacy

Ֆարմաբիոտեխնոլոգիայի և ֆարմակոգնոզիայի ամբիոն  
Assistant

## Education

<b>Institution</b>	Armenian State Pedagogical University after Kh. Abovyan
<b>Faculty</b>	Faculty of Biology and Chemistry, Department of Bio-ecology
<b>Date</b>	2000 - 2005
<b>Degree name</b>	Qualified specialist

## Scientific Rank/degree

<b>Institution</b>	SPC "Armbiotechnology" NAS RA SNPO
<b>Date</b>	2014
<b>Degree name</b>	Candidate
<b>Specialty</b>	Biological sciences
<b>Scientific Supervisor</b>	Avetisova Gayane Ye.
<b>Research Topic</b>	"Obtaining of Highly Active Strain-Producers of L-alanine and Development of Biosynthesis Technology"

## Language skills

English

## Work experience

<b>Institution</b>	SPC "Armbiotechnology" NAS RA, SNPO
<b>Period of time</b>	2018 till now
<b>Rank/degree</b>	Senior Researcher

<b>Institution</b>	Institute of Pharmacy, Yerevan State University
<b>Period of time</b>	2017 till now
<b>Rank/degree</b>	Assistant Professor

<b>Institution</b>	Armenian State Pedagogical University after Kh. Abovyan, Chair of Human and Animals Physiology
<b>Period of time</b>	2015 - 2016
<b>Rank/degree</b>	Lecturer

## Participation in international conferences and seminars

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<b>17/09/2022 - 03/11/2022</b>	“21T-2I229: Development of a New Multifunctional Biotechnological Preparation as a Biofertilizer, Biostimulant, Biopesticide”, 2021-2024 (funded by the Science Committee of the Ministry of Education, Science, Culture and Sport RA), Project coordinator) Laboratório Nacional de Energia e Geologia, I.P. (LNEG), Lisbon Portugal
<b>02/09/2022 - 16/09/2022</b>	“BRISK2” Transnational Access (TA) (Grant Agreement nº 731101 - Horizon 2020 project funded by the European Commission), “Lneg4: Advantages of Mutualistic Relationships between Microalgae and Nitrogen-Fixing Bacteria”, grantee Laboratório Nacional de Energia e Geologia, I.P. (LNEG), Lisbon Portugal
<b>16/06/2019 - 18/08/2019</b>	“Phoenix (H2020-MSCA-RISE-2015 Grant Agreement NUMBER 690925, secondee) Laboratório Nacional de Energia e Geologia, I.P. (LNEG), Lisbon Portugal
<b>19/07/2018 - 21/08/2018</b>	“Phoenix (H2020-MSCA-RISE-2015 Grant Agreement NUMBER 690925, secondee) Laboratório Nacional de Energia e Geologia, I.P. (LNEG), Lisbon Portugal
<b>07/07/2018 - 14/07/2018</b>	43rd FEBS Congress (“FEBS Bursary” grantee) - Czech Republic (the)
<b>09/07/2017 - 13/07/2017</b>	7th Congress of European Microbiologists (FEMS) (#203719 “Short Term Conference and Travel Grant” funded by Calouste Gulbenkian Foundation, grantee) - Spain
<b>13/12/2014 - 19/12/2014</b>	International Conference “Translational Biocatalysis” (#137270 “Short Term Conference and Travel Grant” funded by Calouste Gulbenkian Foundation, grantee) - United Kingdom of Great Britain and Northern Ireland (the)

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## Membership

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<b>Institution</b>	Federation of European Biochemical Societies (FEBS)
<b>Period of time</b>	2017 till now
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<b>Institution</b>	Federation of European Microbiological Societies (FEMS)
<b>Period of time</b>	2016 till now
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<b>Institution</b>	Armenian Association of Biochemists

**Period of time** 2017 till now

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**Institution** Armenian Microbiological Association

**Period of time** 2016 till now

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**Institution** Biotechnological Association of Armenia

**Period of time** 2009 till now

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## **Other information**

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2005-2009: Post-graduate student (SPC "Armbiotechnology" NAS RA SNPO)

## **Publications**

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*Article*

**Reducing nutrient requirement using nitrogen-fixing bacteria for microalgae cultivation**

L. Melkonyan, A. Ferreira, C.R.V. Bastos, D. Figueiredo, T. Lopes da Silva, G. Avetisova, Zh. Karapetyan, A. Toplaghaltsyan, L. Gouveia

Bioresource Technology Reports 2025 102180

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*Article*

**Consortium of microalgae/nitrogen-fixing bacteria as a next-generation biofertilizer, biostimulant and biopesticide**

Luisa Gouveia, Alice Ferreira, Carolina Vela Bastos, Gayane Avetisova, Zhaneta Karapetyan, Anna Toplaghaltsyan, Lusine Melkonyan

Journal of Applied Phycology 2025 -

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*Article*

**Obtaining of osmoresistant mutants in L-histidine-producing coryneform bacterium to improve efficiency of target amino acid biosynthesis**

Susanna Keleshyan, Zhaneta Karapetyan, Anna Toplaghaltsyan, Lusine Melkonyan, Vahe Ghochikyan, Luiza Manukyan, Gevorg Tsarukyan, Sofya Martirosyan, Tamara Davidyan, Nelli Avetisyan,

Gayane Avetisova

Functional Food Science 2025 462-472

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*Article*

**Optimizing Chlorella vulgaris production and exploring its impact on germination through microalga-N<sub>2</sub>-fixing bacteria consortia**

Ana Sanchez-Zurano, Silvia Vilaró-Cos, Daniel Figueiredo, Lusine Melkonyan, Alice Ferreira, Francisco Gabriel Ación, Tomas Lafarga, Luisa Gouveia

Journal of Biotechnology 2025 244-253

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*Article*

**Characterization of important new industrial enzymes CGTase and their application in the transglycosylation of stevia glycosides**

Vahe Ghochikyan, Gayane Avetisova, Tigran Soghomonyan, Luiza Manukyan, Susanna Keleshyan,

Lusine Melkonyan

*Article*

**Biofertilizer based on Agrobacterium as a key to food security**

Gayane Avetisova, Lusine Melkonyan, Vahe Ghochikyan, Gevorg Tsarukyan, Anna Toplaghalsyan, Zhaneta Karapetyan, Susanna Keleshyan

Bioactive Compounds in Health and Disease 2024 558-569

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*Article*

**Antibiotic-resistant mutants of lactic acid bacteria: potential food control agents**

Keleshyan Susanna, Karapetyan Zhaneta, Toplaghalsyan Anna, Khachaturyan Nune, Chitchyan Karine, Gevorgyan Sona, Melkonyan Lusine, Ghochikyan Vahe, Tsarukyan Gevorg, Avetisova Gayane

Bioactive Compounds in Health and Disease 2024 430-443

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*Article*

**Obtaining Osmo resistant Mutants in Nitrogen Fixing Bacteria Isolated from Saline Soils**

Keleshyan S. K., Karapetyan Z. V., Toplaghalsyan A. G., Avetisova G. Y., Melkonyan L. H.,

Vardanyan A. A., Ghochikyan V. T.

Current Microbiology 2022 251

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*Article*

**Brevibacterium flavum մանրէի հիման վրա L-տրիպտոֆանի շտամ-արտադրիչի ստացման գենետիկասելեկցիոն մոտեցումները**

Ավետիսովա Գ., Մելքոնյան Լ., Ծառուկյան Գ., Ղոչիկյան Վ., Քելեշյան Ս., Կարապետյան Ժ., Թովիլադադյան Ա.

ՀԻՄՆԱՐԱՐ ԵՎ ԿԻՐԱՌԱԿԱՆ ԳԻՏԱԿԱՆ ՀԵՏԱԶՈՏՈՒԹՅՈՒՆՆԵՐ. ԱՐԴԻԱԿԱՆ ԽՆԴԻՐՆԵՐ ԵՎ ՁԵՌՔԲԵՐՈՒՄՆԵՐ 2022 173-187

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*Article*

**Microbial approaches for amino acids production**

A. Paloyan, L. Melkonyan, G. Avetisova

Microbial Syntrophy-Mediated Eco-enterprising 2022 177-209

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*Article*

**Enzymatic activity of nitrogen-fixing bacteria isolated from armenian saline soils**

Toplaghalsyan A., Karapetyan Zh., Keleshyan S., Avetisova G., Melkonyan L., Tsarukyan G.,

Ghochikyan V.

International Scientific Conference on Microbial Biotechnology, 5th edition 2022 55-60

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*Article*

**Biostimulant and biopesticide potential of microalgae growing in piggery wastewater**

Alice Ferreira, Lusine Melkonyan, Sofia Carapinha, Belina Ribeiro, Daniel Figueiredo, Gayane Avetisova, Luisa Gouveia

Environmental Advances 2021 100062

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*Article*

**Co-cultivation of L-tryptophan-producing strain Brevibacterium flavum and Azotobacter vinelandii as an alternative method for indole-3-acetic acid production**

Avetisova G., Melkonyan L., Toplaghalsyan A., Tsarukyan G., Keleshyan S., Karapetyan Z.,

Ghochikyan V.

BIOTECHNOLOGY: SCIENCE AND PRACTICE, INNOVATION AND BUSINESS 2021 6-10

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*Article*

**Influence of Vitamins on L-Tryptophan Production by *Brevibacterium flavum***

Melkonyan L., Avetisova G., Tsarukyan G., Keleshyan S., Karapetyan Z., Toplaghalsyan A.,

Ghochikyan V.

BIOTECHNOLOGY: SCIENCE AND PRACTICE, INNOVATION AND BUSINESS 2021 82-86

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*Article*

**Production and properties of a novel raw starch hydrolyzing  $\alpha$  amylase from *Bacillus amyloliquefaciens* MDC1974**

Paloyan A.M., Melkonyan L.H., Sargsyan A.S., Mkhitarian A.V., Dyukova K.G., Hambardzumyan A.A.

Electronic Journal of Natural Sciences of NAS RA 2020 4-11

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*Article*

***Scenedesmus obliquus* microalga-based biorefinery - from brewery effluent to bioactive compounds, biofuels and biofertilizers - aiming a circular bioeconomy**

A. Ferreira, B. Ribeiro, M.L.A. Tavares, J. Vlacic, S. Vidovic, D. Cvetkovic, L. Melkonyan, G. Avetisova,

V. Goginyan, L. Gouveia

Biofuels, Bioproducts and Biorefining 2019 1169-1186

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*Article*

**Характеристика микрофлоры засоленных почв Армении**

С.К. Келешян, Ж. В. Карапетян, А.Г. Топлакалцян, Г.Е. Аветисова, Л.О. Мелконян, В.Т. Кочикян

Хранение и переработка сельхозсырья 2019 76-85

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*Book*

**Combining Microalgae-Based Wastewater Treatment with Biofuel and Bio-Based Production in the Frame of a Biorefinery. In: Hallmann A., Rampelotto P. (eds) Grand Challenges in Algae Biotechnology. Grand Challenges in Biology and Biotechnology**

Alice Ferreira, Alberto Reis, Senka Vidovic, Jelena Vlacic, Spyros Gkelis, Lusine Melkonyan,

Gayane Avetisova, Roberta Congestri, Gabriel Acién, Raul Muñoz, Pierre Collet, Luisa Gouveia

2019 591

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*Article*

**Новое биоудобрение «Азоцеовит-1» для органического овощеводства и его испытание на посадках перца и баклажана в Армении**

К.М. Сарикян, Г.Ж. Саргсян, Г.Е. Аветисова, Л.О. Мелконян

Неделя науки в Крутах -2017 2017 264-271

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*Article*

**НОВЫЙ БИОПРЕПАРАТ «ЭКОБИОФИД+» ДЛЯ ОРГАНИЧЕСКОГО ЗЕМЛЕДЕЛИЯ И ЕГО ИСПЫТАНИЕ НА ПОСАДКАХ ТОМАТОВ В АРМЕНИИ**

Мелконян Л.О., Степанян С.Х., Аветисова Г.Е., Сарикян К. М.

INNOVATIVE APPROACHES AND PERSPECTIVE IDEAS OF YOUNG SCIENTISTS IN AGRARIAN SCIENCES. The proceedings of the international scientific-practical conference of young scientist 2017 384-387

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Article

**Influence of Glutamate Dehydrogenase Activity on L-Proline Synthesis**

S.K. Keleshyan, Zh.V. Karapetyan, A.Kh. Chakhalyan, N.A. Hovhannisyan, G.Ye. Avetisova,  
M.B. Chitchyan, G.G. Oganezova, M.A. Melkumyan, N.S. Avetisyan, L.H. Melkonyan  
Applied Biochemistry and Microbiology 2017 470-476

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Article

**Изучение ингибирующих свойств новых небелковых аминокислот и отбор эффективных аналогов L-аминокислот для селекции высокоактивных штаммов-продуцентов**

А.Х. Чахалян, С.К. Келешян, Ж.В. Карапетян, А.Г. Давтян, Г.Е. Аветисова, Л.О. Мелконян,  
А.С. Дадаян, А.С. Сагиян  
Прикладная биохимия и микробиология (Applied Biochemistry and Microbiology) 2016 62-67  
[http://elibrary.ru/title\\_about.asp?id=7955](http://elibrary.ru/title_about.asp?id=7955)

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Article

**The nitrogen-fixing strain for biopreparation**

L.H. Melkonyan, G.H. Tepanosyan, G.Ye. Avetisova, A.Kh. Chakhalyan, S.Gh. Keleshyan,  
Zh.V. Karapetyan  
Biological Journal of Armenia 2016 65-68  
<http://www.flib.sci.am/eng/Biology/>

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Conference

**BIOTECHNOLOGICAL APPROACHES FOR OBTAINING OF NEW COMPLEX BIOPREPARATION FOR ORGANIC AGRICULTURE**

L. Melkonyan, G. Avetisova, A. Chakhalyan, S. Keleshyan, Zh. Karapetyan, S. Stepanyan,  
A. Toplaghalsyan, A. Saghyan

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Conference

**PURIFICATION AND CHARACTERIZATION OF A-AMYLASE FROM BACILLUS AMYLOLIQUIFACIENS**

A. Paloyan, L. Melkonyan, A. Mkhitarian, A. Hambardzumyan, A. Saghyan

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Conference

**Substrate specificity of  $\alpha$ -amylase isolated from *B. amyloliquefaciens* strain MDC1974**

A. Paloyan, L. Melkonyan, A. Sargsyan, A. Mkhitarian, A. Hambardzumyan

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Conference

**Effect of " Ecobiofeed+ " Biopreparation on Eggplant (*Solanum Melongena* S.)**

G. Avetisova, L. Melkonyan, S. Stepanyan, K. Sarikyan, V. Ghochikyan, S. Keleshyan, Zh. Karapetyan,  
A. Toplaghalsyan

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Conference

**Screening of lactic acid bacteria with a wide spectrum of antifungal activity**

A. Toplaghalsyan, S. Keleshyan, Zh. Karapetyan, N. Khachaturian, G. Avetisova, L. Melkonyan,  
S. Stepanyan

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Conference

**Optimization of fermentation condition for  $\alpha$ -amylase production**

A. Paloyan, L. Melkonyan, A. Sargsyan, T. Arakelyan, M. Izmailyan, G. Avetisova, A. Hambardzumyan,

A. Saghyan

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*Conference*

**Study of some metals effect on  $\alpha$ -amylase activity of *Bacillus amyloliquefaciens* MDC 1974 strain**

L. Melkonyan, A. Paloyan, A. Hambardzumyan, G. Avetisova, A. Mkhitarian, A. Sargsyan, S. Stepanyan, S. Arabachyan, A. Saghyan

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*Conference*

**Study of synthesis of amino acids by *Azotobacter vinilandii* AV1 strain**

G. Avetisova, L. Melkonyan, A. Paloyan, V. Ghochikyan, A. Tsaturyan, S. Keleshyan, Z. Karapetyan, A. Toplaghalsyan

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*Conference*

**Optimization of fermentation conditions for histidine producers resistant to non-protein amino acids**

A. Toplaghalsyan, S. Keleshyan, Z. Karapetyan, G. Avetisova, L. Melkonyan, A. Vardanyan

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*Conference*

**New  $\alpha$ - amylase from *Bacillus* sp. MDC 3500 strain**

A. Paloyan, L. Melkonyan, A. Hambardzumyan, A. Mkhitarian, G. Avetisova

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*Conference*

**Industrial wastewater-grown *Scenedesmus obliquus* biomass-to-fuels and biofertilizers production: an integrative approach**

A. Ferreira, B. Ribeiro, J. Vladic, S. Vidovic, D. Cvetkovic, L. Melkonyan, G. Avetisova, A.F. Ferreira, A. Reis, L. Gouveia

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*Conference*

**Tiny Microalgae For Huge Applications. Biorefinery Approach**

Alice Ferreira, Sofia Carapinha, Jelena Vladic, Senka Vidovic, Dragoljub Cvetkovic, Lusine Melkonyan, Gayane Avetisova, Luisa Gouveia

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*Conference*

***Agrobacterium* sp. as nitrogen-fixing bacteria: effect of osmo-resistant strains on the growth of plants in saline soils of Armenia**

S. Keleshyan, Zh. Karapetyan, A. Toplaghalsyan, G. Avetisova, L. Melkonyan, G. Tsarukyan, V. Ghochikyan

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*Conference*

**New  $\alpha$ -amylase with potential to commercialize**

A. Paloyan, L. Melkonyan, A. Mkhitarian, K. Dyukova, A. Hambardzumyan

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*Conference*

**ASSESSMENT OF BIOSTIMULANT AND BIOPESTICIDE POTENTIAL OF MICROALGAE FOLLOWING PIGGERY WASTEWATER TREATMENT**

A. Ferreira, L. Melkonyan, S. Carapinha, B. Ribeiro, D. Figueiredo, G. Avetisova, L. Gouveia

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Conference

**Determination of Enzymatic Activity of Nitrogen-Fixing Bacteria Isolated from Saline Soils of Armenia**

Toplaghalsyan A., Keleshyan S., Karapetyan Z., Avetisova G., Melkonyan L., Tsarukyan G.

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Conference

**BACTERIAS FIJADORAS DE NITRÓGENO COMO ALTERNATIVA AL USO DE FERTILIZANTES QUÍMICOS PARA LA PRODUCCIÓN DE *Chlorella vulgaris***

Ana Sánchez-Zurano, Silvia Villaró Cos, Daniel Figueiredo, Lusiné Melkonian, Francisco Gabriel Ación, Tomás Lafarga, Luísa Gouveia

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Conference

**ISOLATION AND CHARACTERIZATION OF NITROGEN-FIXING BACTERIA TO CREATE A NEW MULTIFUNCTIONAL BIOTECHNOLOGICAL MEAN FOR ORGANIC AGRICULTURE**

Lusine Melkonyan, Zhaneta Karapetyan, Anna Toplaghalsyan, Luisa Gouveia, Gayane Avetisova

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Conference

**CREATING A CONSORTIUM OF NITROGEN-FIXING BACTERIUM AND MICROALGA FOR HEALTHIER ORGANIC FOOD**

Lusine Melkonyan, Alice Ferreira, Carolina Vela Bastos, Daniel Figueiredo, Gayane Avetisova, Zhaneta Karapetyan, Anna Toplaghalsyan, Luisa Gouveia

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Conference

**MICROBIAL PRODUCTION OF THE ESSENTIAL AMINO ACID L-TRYPTOPHAN FOR FOOD AND NUTRITION**

Gayane Avetisova, Vahe Ghochikyan, Gevorg Tsarukyan, Susanna Keleshyan, Zhaneta Karapetyan, Anna Toplaghalsyan, Lusine Melkonyan

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Conference

**GROWTH DYNAMICS OF NITROGEN-FIXING BACTERIA AT INCREASED SALINITY**

Toplaghalsyan A., Karapetyan Zh., Keleshyan S., Avetisova G., Melkonyan L., Tsarukyan G.,

Ghochikyan V.

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Conference

**ENZYMATIC ACTIVITY OF NITROGEN-FIXING SOIL BACTERIA**

Toplaghalsyan A., Karapetyan Zh., Keleshyan S., Avetisova G., Melkonyan L., Tsarukyan G.,

Ghochikyan V.

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Conference

**ԱՉՈՏ ՖԻԶՈՂ ՄԱՆՐԵՆԵՐԻ ԵՎ ՄԻԿՐՈՋԻՄՈՒՐԻ ԿՈՆՍՈՐՑԻՈՒՄՆԵՐԸ՝ ՈՐՊԵՍ**

**ԿԵՆՍԱՊԱՐԱՐՏԱԼՅՈՒԹ, ԿԵՆՍԱԽԹԱՆԻՉ ՈՒ ԿԵՆՍԱՊԵՍԻՑԻԴ**

Մելքոնյան Լ., Ավետիսովա Գ., Կարապետյան Ժ., Թոփիլաղայցյան Ա., Գուլվեյա Լ. (Gouveia L.)

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Conference

**BIOFERTILIZER BASED ON AGROBACTERIUM AS A KEY TO FOOD SECURITY**

Gayane Avetisova, Lusine Melkonyan, Vahe Ghochikyan, Gevorg Tsarukyan, Anna Toplaghalsyan, Zhaneta Karapetyan, Susanna Keleshyan

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Conference

**ANTIBIOTIC-RESISTANT MUTANTS OF LACTIC ACID BACTERIA: POTENTIAL FOOD CONTROL AGENTS**

Susanna Keleshyan, Zhaneta Karapetyan, Anna Toplaghaltsyan, Nune Khachaturyan, Karine Chitchyan, Sona Gevorgyan, Lusine Melkonyan, Vahe Ghochikyan, Gevorg Tsarukyan, Gayane Avetisova

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*Conference*

**Some Features of Nitrogen-Fixing Bacterium and Microalga to Develop a Multifunctional Biobased Product for Sustainable Agriculture**

Lusine Melkonyan, Anna Toplaghaltsyan, Zhaneta Karapetyan, Luisa Gouveia, Gayane Avetisova

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