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## Doctoral School of Integrative Biology

### 1. PhD Student:

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### 2. Doctorate

**2.1. PhD thesis title:** GENES INVOLVED IN THE SQUALENE-SYNTHASE ACTIVITY AT DIFFERENT CHEMICAL RACES OF BOTRYOCOCCUS (CHLOROPHYTA)

**2.2. PhD coordinator:** prof. dr. Nicolae DRAGOȘ

**2.3. Date of PhD thesis defense (link from site):** <https://doctorat.ubbcluj.ro/ro/sustinerile-publice-ale-tezelor-de-doctorat/?an=2019&luna=12&facultate=4&domeniu=0>

**2.4. Grade:** POSTDOC

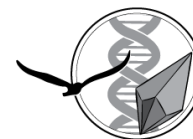
### 3. Scientific articles published in:

#### 3.1. Impact factor journals (IF, AIS):

**3.1.1.** Dragoș, N., Chiriac, C., Porav, S., **Szőke-Nagy, T.**, Coman, C., Török, L., Hegedűs, A. (2019), *Desmodesmus tropicus* (Chlorophyta) in the Danube Delta – reassessing the phylogeny of the series Maximi, Eur. J. Phycol., [doi.org:10.1080/09670262.2018.1558286](https://doi.org/10.1080/09670262.2018.1558286) (IF **2.481**).

**3.1.2.** **Szőke-Nagy, T.**, Porav, A. S., Coman, C., Cozar, I. B., Dina, N. E., Tripon, C. (2018), Characterization of the action of antibiotics and essential oils against bacteria by surface-enhanced Raman spectroscopy and scanning electron microscopy, *Anal. Lett.*, [doi.org:10.1080/00032719.2018.1430150](https://doi.org/10.1080/00032719.2018.1430150), **52** (1), PIM Sp. Iss., pp. 190-200, (IF **1.206**).

**3.1.3.** Szekeres, E., Chiriac, C. M., Baricz, A., **Szőke-Nagy, T.**, Lung, I., Soran, M.-L., Rudi, K., Dragoș, N., Coman, C. (2018), Investigating antibiotics, antibiotic resistance genes, and microbial contaminants in groundwater in relation to the proximity of urban areas, *Environ. Pollut.*, [doi.org:10.1016/j.envpol.2018.01.107](https://doi.org/10.1016/j.envpol.2018.01.107) **236**, pp. 734-744 (IF **4.358**).



**3.1.4.** Cozar, I. B., Colniță, A., **Szöke-Nagy, T.**, Gherman, A. M. R., Dina, N. E. (2017), Label-free detection of bacteria using surface-enhanced Raman scattering and principal component analysis, *Anal. Lett.*, [doi.org:10.1080/00032719.2018.1445747](https://doi.org/10.1080/00032719.2018.1445747), **52** (1), PIM Sp. Iss., pp. 177-189, (IF **1.206**).

**3.1.5.** Dina, N. E., Zhou, H., Colniță, A., Leopold, N., **Szöke-Nagy, T.**, Coman, C., Haisch, C. (2017), Rapid single-cell detection and identification of pathogens by using surface-enhanced Raman spectroscopy, *Analyst*, [doi.org:10.1039/C7AN00106A](https://doi.org/10.1039/C7AN00106A), **142**, pp. 1782-1789 (IF **3.864**).

**3.1.6.** Dina, N. E., Colniță, A., **Szöke-Nagy, T.**, Porav, A. S. (2017), A critical review on ultrasensitive, spectroscopic-based methods for high-throughput monitoring of bacteria during infection treatment, *Crit. Rev. Anal. Chem.*, [doi.org:10.1080/10408347.2017.1332974](https://doi.org/10.1080/10408347.2017.1332974), **47** (6) pp. 499-512 (IF **3.231**).

**3.1.7.** Dina, N. E., Leș, A., Baricz, A., **Szöke-Nagy, T.**, Leopold, N., Sârbu, C., Banciu, H. L. (2017), Discrimination of haloarchaeal genera using Raman spectroscopy and robust methods for multivariate data analysis, *J. Raman Spectrosc.*, [doi.org:10.1002/jrs.5187](https://doi.org/10.1002/jrs.5187), **48** (8), 2017, pp. 1122–1126 (IF **2.879**).

**3.1.8.** Opreș, O., Soran, M. L., Lung, I., Trușcă, M. R. C., **Szöke-Nagy, T.**, Coman, C. (2016), The optimization of the antibiotics extraction from wastewaters and manure using Box–Behnken experimental design, *Int. J. Environ. Sci. Technol.*, [doi.org:10.1007/s13762-016-1165-2](https://doi.org/10.1007/s13762-016-1165-2), **14** (3), pp. 473-480, DOI 10.1007/s13762-016-1165-2 (IF **1.915**).

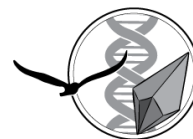
## 3.2. IDB journals:

**3.2.1.** **Szöke-Nagy, T.**, Porav, A. S., Dragos, N (2020), *In silico* modelling and analysis of squalene synthase-like 1 (SSL-1) from green microalga *Botryococcus terribilis* AICB 872, *Studia UBB Biologia*, [doi.org:10.24193/subbbiol.2020.1.01](https://doi.org/10.24193/subbbiol.2020.1.01), LXV (1), pp. 5-18.

**3.2.2.** Chiriac, C. M., Barbu-Tudoran, L., Baricz, A., Szekeres, E., **Szöke-Nagy, T.**, Dragoș, N., Coman, C. (2015), Bacterial diversity in a microbial mat colonizing a man-made geothermal spring from Romania, *Studia UBB Biologia*, LX (1), pp. 2-22.

**3.2.3.** Szekeres, E., Dragoș, N., Porav, A. S., Baricz, A., Chiriac, C., **Szöke-Nagy, T.**, Coman, C., 2015, Evaluation of bio-resources: monitoring *Arthrospira* growth in supplemented brackish water, *Studia UBB Biologia*, LX, Sp. Iss., pp. 45-48.

**3.2.4.** **Szöke-Nagy, T.**, Hegedűs, A., Baricz, A., Chiriac, C., Szekeres E., Coman, C., Dragoș, N., 2015, Identification, isolation and bioinformatic analysis of squalene synthase-like cDNA fragments in *Botryococcus terribilis* AICB 870 strain, *Studia UBB Biologia*, LX (1), pp. 23-37.



**3.2.5.** Bica, A., Barbu-Tudoran, L., Drugă, B., Coman, C., Nicoară, A., Szőke-Nagy, T., Dragoș, N., 2012, *Desmodesmus communis* (Chlorophyta) from Romanian freshwater: cenobial morphology and molecular taxonomy based on the ITS2 of new isolates, *Annals of the Romanian Society for Cell Biology*, XVII (1), pp. 16-28.

#### 4. Scientific conferences/symposia

##### 4.1. International:

**4.1.1.** Dina, N. E., Colniță, A., Cozar, I. B., Szőke-Nagy, T., (2017), Bacterial barcoding - a SERS mapping technique for ultrasensitive detection of pathogens, 3rd International Conference on Enhanced Spectroscopies (ICES 2017), Septembrie 4-7, München, Germania.

**4.1.2.** Szőke-Nagy, T., Dina, N. E., Colniță, A., Cozar, I. B., (2017), Bacterial cell membrane barcoding, a SERS mapping methodology for identification and detection of potential pathogenic bacteria, 7<sup>th</sup> Congress of European Microbiologists (FEMS 2017), July 9-13, Valencia, Spania.

**4.1.3.** Szőke-Nagy, T., Dina, N. E., Porav, S., Tripon, C., (2017), Antimicrobial and inhibitory effects of therapeutic-grade essential oils against three environmental isolated bacterial strains, 7<sup>th</sup> Congress of European Microbiologists (FEMS 2017), July 9-13, Valencia, Spania.

**4.1.4.** Andrei, Ș. A., Szekeres, E. K., Szőke-Nagy, T., Chiriac, C. M., Baricz, A. I., Dragoș, N., Coman, C., (2015), Environmental filtering reduces antibiotic resistance genes abundance in urban wastewater treatment plants, 6<sup>th</sup> International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld 2015), Octombre 28-30, Barcelona, Spania.

**4.1.5.** Chiriac, C. M., Szekeres, E. K., Baricz, A. I., Szőke-Nagy, T., Andrei, Ș. A., Dragoș, N., Coman, C., (2015), Evaluation of antibiotic resistance genes in human impacted environments from Romania: a preliminary step for an environmental protection strategy, 6<sup>th</sup> International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld 2015), Octombre 28-30, Barcelona, Spania.

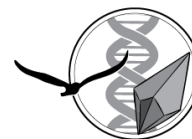
**4.1.6.** Coman, C., Baricz, A. I., Chiriac, C. M., Szekeres, E. K., Szőke-Nagy, T., Andrei, Ș. A., Dragoș, N., (2015), A methodological framework to monitor pollution with antibiotics and antibiotic resistant microorganisms – the EnviroAMR project, 6<sup>th</sup> International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld 2015), Octombre 28-30, Barcelona, Spania.

**4.1.7.** Szőke-Nagy, T., Dragoș, N., (2012), 3D Structure prediction of squalene-synthases from algae and plants, 16th Symposium of Biology Students in Europe, Szeged-Gödöllő, 27 July - 6 August 2012, Ungaria, pp. 48-49.

##### 4.2. National:

**4.2.1.** Colniță, A., Szőke-Nagy, T., Gherman, A.-M. R., Cozar, I. B., Dina, N. E., (2018), Detection and Identification of Pathogenic Microorganisms Using Ultrasensitive Raman Spectroscopy, *Conferința Națională de Biofizică*, September 7, București, Romania.

**4.2.2.** Colniță, A., Gherman, A. M. R., Szőke-Nagy, T., Cozar, I. B., Dina, N. E., (2018), The Use of *In situ* Surface Enhanced Raman Spectroscopy Technique for Antibiotic Resistance Determination of Pathogenic Microorganisms, *International Conference on Analytical and*



*Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-AMBES 2018)*, May 23-25, Braşov, Romania.

**4.2.3.** Buimaga-Iarinca, L., Morari, C., Colniță, A., Neamțu, S., Fischer-Fodor, E., **Szőke-Nagy, T.**, Farcas, A., Turcu, I., (2018), IMAGCELL – Assessing living cells natural features by employing optical microscopy and statistical analysis, *International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-AMBES 2018)*, May 23-25, Braşov, Romania.

**4.2.4.** Gherman, A. M. R., Marconi, D., Colniță, A., Szabo, L., Leopold, N., **Szőke-Nagy, T.**, Dina, N. E., (2018), Microfluidic Portable Device for Pathogens' Rapid SERS Detection, *International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-AMBES 2018)*, May 23-25, Braşov, Romania.

**4.2.5.** Porav, S., **Szőke-Nagy, T.**, Dina, N. E., Cozar, B., Muntean, C., Tripon, C., (2017), Structural features induced in pathogenic bacteria by their interaction with natural and synthetic antibiotic agents, *11<sup>th</sup> International Conference on Processes in Isotopes and Molecules (PIM 2017)*, September 27-29, Cluj-Napoca, România.

**4.2.6.** **Szőke-Nagy, T.**, Gherman, A. M. R., Colniță, A., Cozar, I. B., Dina, N. E., (2017), Antibiotic susceptibility of *Aeromonas hydrophilia* monitored through SERS mapping methodology, *11<sup>th</sup> International Conference on Processes in Isotopes and Molecules (PIM 2017)*, September 27-29, Cluj-Napoca, România.

**4.2.7.** Hegedus, A., Porav, S., **Szőke-Nagy, T.**, Torok, L., Coman, C., Dragoş, N., (2017), *Desmodesmus tropicus* in Danube Delta: morphological and phylogenetic approaches, *1<sup>st</sup> International Congress of Danube Region Botanical Gardens*, September 7-9, Arad, Romania.

**4.2.8.** Szekeres, E., Barcz, A. I., Chiriac, C. M., **Szőke-Nagy, T.**, Andrei, Ş. A., Coman C., (2016), Antibiotics and antibiotic resistant microorganisms: anthropic impact on natural environments, "Kolozsvári Biológus Napok", April 2016, Cluj-Napoca, Romania.

**4.2.9.** Szekeres, E., Dragoş, N., Porav, A. S., Baricz, A., Chiriac, C., **Szőke-Nagy, T.**, Coman, C., (2015), Evaluation of Bio-Resources: Monitorig *Arthospira* growth in supplemented rackish water, *International Conference: Molecular Biology – Current Aspects and Prospects*, Novembre 6-8, Cluj-Napoca, Romania.

**4.2.10.** Chiriac, C., Baricz, A., Szekeres, E., **Szőke-Nagy, T.**, Dragoş, N., Coman, C., (2015), A Perspective on the Ecological Functions of Antibiotics in Natural Environments, *7<sup>th</sup> National Congress with International Participation and 33<sup>th</sup> Annual Scientific Session of Romanian Society for Cell Biology*, June 10-14, Baia Mare, Romania, Bull. RSBC no. 43, pp. 36.

**4.2.11.** Hegedüs (Bica), A., Coman, C., Drugă, B., **Szőke-Nagy, T.**, Sicora, C., Dragoş, N., (2013), Single-Colony PCR, A New Molecular Technique in Studying the *Botryococcus* Genus Diversity, *Deltas and Wetlands*, nr. 1, Tulcea, pp. 13.

**4.2.12.** Filip, A., Uțiu, I., Munteanu, C., Guțu, M., **Szőke-Nagy, T.**, Crăciun, C., Guțu, D., Lang, C., Roşioru, C., (2012), *Trigonella foenum-graecum* seeds - a natural hepatoprotector, *4<sup>rd</sup>*



*International Congress and 30<sup>th</sup> Annual Scientific Session of Romanian Society for Cell Biology*, June 13-17, Satu Mare-Debrecen, Bull. RSBC no. 40, p. 59.

**4.2.13. Szőke-Nagy, T.**, Pribac, G., Tripon, S., Crăciun, C., Roșioru C., (2012), Ultrastructural modifications in the liver of streptozotocin-induced diabetic rats *4<sup>rd</sup> International Congress and 30<sup>th</sup> Annual Scientific Session of Romanian Society for Cell Biology*, June 13-17, Satu Mare-Debrecen.

**4.2.14. Trif, M., Filip, A., Crăciun, C., Munteanu, C., Ușiu, I., Szőke-Nagy, T., Lukaci, C., Tripon, S., Roșioru, C.**, (2012), Biological activities of furil-benzothiazole (R)- and (S)- enantiomers and racemic in the liver of ethanol-intoxicated rats, *4<sup>rd</sup> International Congress and 30<sup>th</sup> Annual Scientific Session of Romanian Society for Cell Biology*, June 13-17, Satu Mare-Debrecen., Bull. RSBC nr. 40, p. 57.

**4.2.15. Szőke-Nagy, T.**, Baricz, A., Chiriac, C., Szekeres, E., Coman, C., Dragoș, N., (2015), Identification of Gene Encoding Squalene Synthase-Like 1 in Five *Botryococcus terribilis* AICB Strains, *7<sup>th</sup> National Congress with International Participation and 33<sup>th</sup> Annual Scientific Session of Romanian Society for Cell Biology*, Baia Mare, 10-14 June 2015, Bull. RSBC no. 43, pp. 50.

**4.2.16. Szőke-Nagy, T.**, Hegedűs A., Coman, C., Drugă, B., Dragoș, N., (2014), Identification of Three Synthase-Like cDNA Fragments in *Botryococcus terribilis* AICB 870, A *Botryococcene* producing microalga, *6<sup>th</sup> National Congress with International Participation and 32<sup>th</sup> Annual Scientific Session of Romanian Society for Cell Biology*, Târgu Mureș, 4-7 June 2014, Bull. RSBC no. 42, pp. 113.

## 5. Projects/Grants:

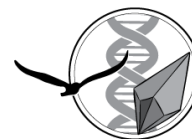
### 5.1. Scientific projects/grants:

**5.1.1.** Pan-European Lake Sampling - Microbial Eco-genomics (PELAGICS), (20-12496X), 2020-present, Institute of Hydrobiology, Biology Centre of the Czech Academy of Sciences, Ceske Budejovice, Czech Republic.

**5.1.2.** High-throughput nanoscreening platform for SERS monitoring of latest generation antibiotics' activity on antibiotic-resistant pathogens at single-cell level, (PN-III-P1-1.1-TE-2019-0910), 2020, National Institute for Research and Development of Isotopic and Molecular Technologies Cluj-Napoca.

**5.1.3.** Design of highly efficient antimicrobial peptides: *in silico* prediction and experimental evaluation, (PN-III-P1-1.1-TE-2016-0032), 2018-2020, National Institute for Research and Development of Isotopic and Molecular Technologies Cluj-Napoca.

**5.1.4.** Emerging molecular technologies based on micro and nano-structured systems with biomedical applications, (PN-III-P1-1.2-PCCDI-2017-0010), 2018-2020, National



Institute for Research and Development of Isotopic and Molecular Technologies Cluj-Napoca.

**5.1.5.** Emerging technologies for the industrial capitalization of 2d structures (graphene and nongraphenic), (PN-III-P1-1.2-PCCDI-2017-0387), 2018-2020, National Institute for Research & Development in Chemistry and Petrochemistry.

**5.1.6.** Development of a microfluidic portable device for pathogen's rapid SERS detection, (PN-III-P2-2.1-PED-2016-0983), 2017-2018, National Institute for Research and Development of Isotopic and Molecular Technologies Cluj-Napoca.

**5.1.7.** Pathogenic microorganisms' rapid detection and identification using high sensitive raman spectroscopy, (PN-II-RU-TE-2014-4-0862), 2015-2017, National Institute for Research and Development of Isotopic and Molecular Technologies Cluj-Napoca.

**5.1.8.** Methodological guide for monitoring antibiotic residues and antimicrobial resistance in the environment as a supporting instrument for an enhanced quality management of surface waters and groundwater (EnviroAMR), (3499/20.05.2015), 2015-2016, National Institute for Research & Development for Biological Sciences, Institute of Biological Research, Cluj-Napoca.

## **6. Visibility (links):**

**6.1. Google Scholar:** <https://scholar.google.com/citations?user=TKZ0jPoAAAAJ>

**6.2. ResearchGate:** <https://www.researchgate.net/profile/Tiberiu-Szoke-Nagy>

**6.3. Orcid id:** <https://orcid.org/0000-0003-1773-3991>

Date: **25 Martie 2021**