

CURRICULUM VITAE

PERSONAL INFORMATION

Address: Republicii Street No. 48, Cluj-Napoca, Romania

First name: Vlad-Alexandru **Last name:** TOMA **Date of birth:** June 11, 1991 **Email:** vlad.toma@ubbcluj.ro

Nationality: Romanian **Languages:** English, French

EDUCATION

Phd/ Babes-Bolyai University, School of Biology and Geology, PhD in Biology (Dec. 2020)

Msc / Babes-Bolyai University, School of Chemistry and Chemical Engineering (Jul. 2015)

Bsc/ Babes-Bolyai University, School of Biology and Geology, specialized in Biochemistry (June 2013)

WORK EXPERIENCE

Babes-Bolyai University| Lecturer (Feb. 2021 - now), **NIRD for Isotopic and Molecular Technology| Researcher**

(May 2014 - now), **Institute of Biological Research| Researcher** (Oct. 2013 - June. 2015, Sept. 2020 - June 2021)

PUBLICATIONS

- 1) **Toma, V.A.**, Filip, A., Farcaș, A., Mirescu, C.Ș., Roșioru, C.L., Effect of hyoscine N-butylbromide on the skeletal muscle contraction in Wistar rat - a few physiological aspects, *Ann. Rom. Soc. Cell Biol.*, **18**(2), 2013, 123-128 (<http://www.annalsofscb.ro/numar%20in%20curs/18%20/18.pdf>).
- 2) Roman, I., Puică, C., **Toma, V.**, The effect of *Vaccinium vitis-idaea* L. extract on kidney structure and function in alcohol intoxicated rats. *Studia Universitatis "Vasile Goldiș"*, **24**(4), 2014, 363-367 (<http://www.studiauniversitatis.ro/pdf/24-2014/24-4-2014/2-%20Roman%20I-%20363-367.pdf>).
- 3) Roman, I., **Toma, V.**, Farcaș, A., Protective effects of *Gallium verum* L., extract on the hypothalamic – pituitary – adrenal axis under anakinetic stress conditions, in rats. Histological aspects. *Studia Universitatis "Vasile Goldiș"*, **25**(3), 2015, 207-214 (<http://www.studiauniversitatis.ro/pdf/25-2015/25-3-2015/10-25-3-%20I.R.-%20207-%20214.pdf>).
- 4) Roman, I., Puica, C., **Toma, V.**, The effect of *Lamium album* and *Lamium purpureum* extracts on some blood parameters under anakinetic stress conditions in Wistar rats. *Bull. Univ. Agric. Sci. Vet. Med.. Cluj-Napoca-Veterinary Medicine*, **73**(1), 2016, 18-20 (<http://journals.usamvcluj.ro/index.php/veterinary/article/view/10902>).
- 5) **Vlad Al. Toma**, Anca D. Farcaș, Ioana Roman, Florina Scurtu-Deac, Radu Silaghi-Dumitrescu. In vivo tests of cell-free hemoglobin-based blood substitutes candidates: histopathological characterization. *Rev Romana Med Lab - Supliment* **24**(1), 2016, 88-89 (http://www.rrml.ro/articole/2016/2016_1_supliment.pdf).
- 6) **Toma, V.**, Farcaș, A., Roman, I., Sevastre, B., Hathazi, D., Scurtu, F., Damian, G., Silaghi-Dumitrescu, R. Comparative in vivo effects of hemoglobin-based oxygen carriers (HBOC) with varying prooxidant and physiological reactivity. *PLoS ONE*, **11**(4), 2016, 1-16 (<https://www.ncbi.nlm.nih.gov/pubmed/27097326>).
- 7) **Toma, V.A.**, Farcaș, A., Parvu, M., Silaghi-Dumitrescu, R., Roman, I. CA3 hippocampal field: Cellular changes and its relation with blood nitro-oxidative stress reveal a balancing function of CA3 area in rats exposed to repeated restraint stress. *Brain Res Bull.*, **130**, 2017, 10-17 (<https://www.ncbi.nlm.nih.gov/pubmed/28013041>).
- 8) Sevastre-Berghian, A. C., Fagarasan, V., **Toma, V.A.**, Baldea I., Olteanu, D., Moldovan, R., Decea, N., Filip, G.A., Clichici, S.V. Curcumin reverses the diazepam-induced cognitive impairment by modulation oxidative stress and ERK 1/2/NF-kB pathway in brain. *Oxid. Med. Cell. Longev.*, Article ID 3037876, 1-17, 2017, 2017 (<https://www.hindawi.com/journals/omcl/2017/3037876/>).
- 9) **Toma, V. A.**, Farcaș, A.D., Roman, I., Sevastre, B., Hathazi, D., Scurtu, F., Damian, G., Silaghi-Dumitrescu, R., In vivo evaluation of hemerythrin-based oxygen carriers: similarities with hemoglobin-based counterparts. *Int. J. Biol.Macromol.*, **S0141-8130**(17), 2017, 31756-7. (<http://www.sciencedirect.com/science/article/pii/S0141813017317567>).
- 10) **Toma, V. A.**, Farcasanu, A., Sevastre-Berghian, A., Barbu-Tudoran L., Tripon, S., Sevastre, B., Farcaș, A.D., Roman, I., Simon, S., Parvu, M. Behavior, MRI features and ultrastructural bases of the autism-like disorders induced in rats by prenatally exposed to sodium valproate, *Brain Disord. Ther.*, **6**(3 Suppl), 56, 2017 (DOI: [10.4172/2168-975X-C1-018](https://doi.org/10.4172/2168-975X-C1-018)).
- 11) Farcaș, A.D., Mot, A.C., Zagrean-Tuza, C., **Toma, V.**, Cimpoi, C., Hosu, A., Parvu, M., Roman, I., Silaghi-Dumitrescu, R. Chemo-mapping and biochemical-modulatory and antioxidant/prooxidant effect of Galium verum extract during acute restraint and dark stress in female rats. *PLoS one*, **13**(7), 2018, e0200022 (<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0200022>).
- 12) **Toma, V.A.**, Dume, B.R., Farcaș, A.D., Roman, I. The antioxidants are not enough. Malus sylvestris (L.) Mill. extract enhances the carbon tetrachloride liver toxicity in albino rats. *Ann. RSCB*, **22**(2), 2018, 26-33 (http://www.annalsofscb.ro/numar%20in%20curs/22%20/vlad4_1.pdf).
- 13) Farcaș, A.D., **Toma, V.A.**, Crisan, F., Dume, B.R., Roman, I. The down-regulation outcome of wild European apple (*Malus sylvestris* (L.) Mill.) extract on a series of biochemical markers during oxidative stress. *Ann. RSCB*, **22**(2), 2018, 34-41 (<http://www.annalsofscb.ro/numar%20in%20curs/22%20/farcas5.pdf>).

- 14) Sevastre-Berghian, A., **Toma, V.A.**, Sevastre, B., Hanganu, D., Vlase, L., Benedec, D., Oniga, I., Olteanu, D., Moldovan, R., Decea, N., Filip, G.A., Clichici, S.V. Characterization and biological effects of Hypericum extracts on experimentally-induced – anxiety, oxidative stress and inflammation in rats. *J. Physiol. Pharmacol*, 69(5), 2018 (http://www.jpp.krakow.pl/journal/archive/10_18/pdf/10.26402/jpp.2018.5.13.pdf).
- 15) Opris, R., **Toma, V.**, Olteanu, D., Baldea, I., Baci, A. M., Lucaci, F. I., ... & David, L. [Effects of silver nanoparticles functionalized with Cornus mas L. extract on architecture and apoptosis in rat testicle](#). *Nanomedicine*, 2019 (ahead of print) (<https://doi.org/10.2217/nnm-2018-0193>).
- 16) Farcaș, A. D., Moț, A. C., Pârnu, A. E., **Toma, V. A.**, Popa, M. A., Mihai, M. C., ... & Pârnu, M. (2019). In vivo pharmacological and anti-inflammatory evaluation of xerophyte *Plantago sempervirens* Crantz. *Oxidative Medicine and Cellular Longevity*, 2019, 2019 (<https://www.hindawi.com/journals/omcl/2019/5049643/abs/>).
- 17) **Toma, V. A.**, Bucălie, E., Farcaș, A. D., Ciolpan, P., Roman, I., Mureșan, A., & Grosu, E. F. Dynamics of salivary cortisol and testosterone during competition stress in alpine skiing in adults and children. *Cognition, Brain, Behavior*, 23(1), 2019, 29-41 (<https://search.proquest.com/docview/2227777974?pq-origsite=gscholar>).
- 18) **Toma, V. A.**, Tigu, A. B., Farcaș, A. D., Sevastre, B., Taulescu, M., Gherman, A. M. R., ... & Pârnu, M. New aspects towards a molecular understanding of the allicin immunostimulatory mechanism via Colec12, MARCO, and SCARB1 receptors. *International Journal of Molecular Sciences*, 20(15), 2019, 3627 (<https://www.mdpi.com/1422-0067/20/15/3627>).
- 19) Laszló, I. P., Laszló, M. R., **Toma, V.**, Baldea, I., Olteanu, D., David, L., ... & Kacso, G. The in vivo modulatory effects of *Cornus mas* extract on photodynamic therapy in experimental tumors. *Photodiagnosis and Photodynamic Therapy*, 101656 (<https://www.sciencedirect.com/science/article/abs/pii/S1572100020300089>).
- 20) Luput, L., Sesarman, A., Porfire, A., Achim, M., Muntean, D., Casian, T., Pătraș, L., Rauca, V.F., Drotar, D.M., Stejerean, I., Tomuta, I., Vlase, L., Dragoș, N., **Toma, V.A.**, Licărete, E., Banciu, M. Liposomal simvastatin sensitizes C26 murine colon carcinoma to the antitumor effects of liposomal 5-fluorouracil in vivo. *Cancer science*, 2020 (<https://onlinelibrary.wiley.com/doi/abs/10.1111/cas.14312>).
- 21) Tigu, A. B., **Toma, V. A.**, Moț, A. C., Jurj, A., Moldovan, C. S., Fischer-Fodor, E., Berindan-Neagoe, I., Pârnu, M. (2020). The Synergistic Antitumor Effect of 5-Fluorouracil Combined with Allicin against Lung and Colorectal Carcinoma Cells. *Molecules*, 25(8), 1947 (<https://www.mdpi.com/1420-3049/25/8/1947/htm>).
- 22) Licărete, E., Rauca, V. F., Luput, L., Drotar, D., Stejerean, I., Patras, L., Dume, B., **Toma, V.A.**, Porfire, A., Gherman, C., Sesarman, A., Banciu, M. (2020). Overcoming Intrinsic Doxorubicin Resistance in Melanoma by Anti-Angiogenic and Anti-Metastatic Effects of Liposomal Prednisolone Phosphate on Tumor Microenvironment. *International Journal of Molecular Sciences*, 21(8), 2968 (<https://www.mdpi.com/1422-0067/21/8/2968>).
- 23) Berghian-Sevastre, A. C., Ielciu, I., Mitre, A. O., Filip, G. A., Oniga, I., Vlase, L., Daniela Benedec, Ana-Maria Gheldiu, **V.A. Toma**, B. Mihart, A. Mihut, I. Baldea, D. Olteanu, I.C. Chis, S.V. Clichici, D. Hanganu (2020). Targeting oxidative stress reduction and inhibition of HDAC1, MECP2 and NF-kB pathways in experimental-induced hyperglycaemia in rats by administration of Thymus marshallianus Willd. extracts. *Frontiers in Pharmacology*, 11, 1492 (<https://www.frontiersin.org/articles/10.3389/fphar.2020.581470/full>).
- 24) Bonea, M., Filip, G. A., **Toma, V. A.**, Baldea, I., Berghian, A. S., Decea, N., ... & Micluția, I. V. (2020). The Modulatory Effect of Metformin on Ethanol-Induced Anxiety, Redox Imbalance, and Extracellular Matrix Levels in the Brains of Wistar Rats. *Journal of Molecular Neuroscience*, 1-19 (<https://link.springer.com/article/10.1007/s12031-020-01593-w>).
- 25) Farcaș*, A. D., **Toma***, V. A., Roman, I., Sevastre, B., Scurtu, F., & Silaghi-Dumitrescu, R. (2020). Glutaraldehyde-Polymerized Hemoglobin: In Search of Improved Performance as Oxygen Carrier in Hemorrhage Models. *Bioinorganic Chemistry and Applications*, 2020 (<https://www.hindawi.com/journals/bca/2020/1096573/>).
- 26) Silaghi-Dumitrescu, R., Gruian, C., Puscas, C., Simon, A., Fisher-Fodor, E., **Toma, V. A.**, ... & Damian, G. (2020). Spin labelled hemoglobin-based oxygen carriers (HBOC): preparation and evaluation of in vivo/in vitro stability. *Studia Universitatis Babeș-Bolyai, Chimia*, 65(2) (http://chem.ubbcluj.ro/~studiachemia/chemia2020_2.html).
- 27) Epure, A., Pârnu, A. E., Vlase, L., Benedec, D., Hanganu, D., Gheldiu, A. M., **Toma, V.A.** & Oniga, I. (2021). Phytochemical Profile, Antioxidant, Cardioprotective and Nephroprotective Activity of Romanian Chicory Extract. *Plants*, 10(1), 64 (<https://www.mdpi.com/2223-7747/10/1/64>).
- 28) Tigu, A. B., Moldovan, C. S., **Toma, V. A.**, Farcaș, A. D., Moț, A. C., Jurj, A., ... & Pârnu, M. (2021). Phytochemical analysis and in vitro effects of *Allium fistulosum* L. and *Allium sativum* L. extracts on human normal and tumor cell lines: a comparative study. *Molecules*, 26(3), 574 (<https://www.mdpi.com/1420-3049/26/3/574>).
- 29) Pop, N. L., Nan, A., Urda-Cimpean, A. E., Florea, A., **Toma, V. A.**, Moldovan, R., ... & Orasan, R. (2021). Chitosan Functionalized Magnetic Nanoparticles to Provide Neural Regeneration and Recovery after Experimental Model Induced Peripheral Nerve Injury. *Biomolecules*, 11(5), 676 (<https://www.mdpi.com/2218-273X/11/5/676>).
- 30) Rauca, V. F., Patras, L., Luput, L., Licărete, E., **Toma, V. A.**, Porfire, A., ... & Banciu, M. (2021). Remodeling tumor microenvironment by liposomal co-delivery of DMXAA and simvastatin inhibits malignant melanoma progression. *BioRxiv* (<https://www.biorxiv.org/content/10.1101/2021.04.26.441259v1.abstract>).
- 31) Cenariu, D., Fischer-Fodor, E., Tigu, A. B., Bunea, A., Virág, P., Perde-Schrepler, M., ... & Maniu, A. (2021). Zeaxanthin-Rich Extract from Superfood *Lycium barbarum* Selectively Modulates the Cellular Adhesion and MAPK Signaling in Melanoma versus Normal Skin Cells In Vitro. *Molecules*, 26(2), 333 (<https://www.mdpi.com/1420-3049/26/2/333>).

- 32) Dionisie, V., Ciobanu, A. M., **Toma, V. A.**, Manea, M. C., Baldea, I., Olteanu, D., ... & Filip, G. A. (2021). Escitalopram targets oxidative stress, caspase-3, BDNF and MeCP2 in the hippocampus and frontal cortex of a rat model of depression induced by chronic unpredictable mild stress. *International Journal of Molecular Sciences*, 22(14), 7483 (<https://www.mdpi.com/1422-0067/22/14/7483>).
- 33) Rauca, V. F., Patras, L., Luput, L., Licarete, E., **Toma, V. A.**, Porfire, A., ... & Banciu, M. (2021). Remodeling tumor microenvironment by liposomal codelivery of DMXAA and simvastatin inhibits malignant melanoma progression. *Scientific reports*, 11(1), 1-15 (<https://www.nature.com/articles/s41598-021-01284-5>).
- 34) Sevastre-Berghian, A. C., **Toma, V. A.**, Sevastre, B., Benedec, D., Oniga, I., Filip, L., ... & Hanganu, D. (2021). Hypericum sp. extracts improve anxiety-like behaviour and influence cerebral HMOX1 expression in a rat model of FG-7142-induced anxiety. *Farmacia*, 69(6), 1080-1088 (https://farmaciajournal.com/wp-content/uploads/art-09-Sevastre-Berghian_Filip_Hanganu_1080-1088.pdf).
- 35) Marc, G., Stana, A., Franchini, A. H., Vodnar, D. C., Barta, G., Tertiş, M., **Toma, V. A.**, ... & Oniga, O. (2021). Phenolic thiazoles with antioxidant and antiradical activity. Synthesis, in vitro evaluation, toxicity, electrochemical behavior, quantum studies and antimicrobial screening. *Antioxidants*, 10(11), 1707 (<https://www.mdpi.com/2076-3921/10/11/1707>).
- 36) Negrea, G., Rauca, V. F., Pătraş, L., Luput, L., Licărete, E., **Toma, V. A.**, ... & Sesărman, A. (2021). Novel combined therapy based on IL-13-PEG-LCL-SIM and PEG-EV-DOX to reduce murine melanoma aggressiveness in vivo. *Studia Universitatis Babeş-Bolyai, Biologia*, 66(1).
- 37) Pop, N. L., Mitrea, D. R., Urdă-Cîmpean, A. E., Glossa-Athanasoula, A., **Toma, V. A.**, Moldovan, R., ... & Orăsan, R. (2021). Chitosan oral administration stimulates regeneration after experimentally induced peripheral nerve injury. *Palestrica of the Third Millennium Civilization & Sport*, 22(2) ([https://jhsrm.org/magazine/010/HSRM%20\(PM3\)_Nr.2\(84\)_2021m.pdf#page=4](https://jhsrm.org/magazine/010/HSRM%20(PM3)_Nr.2(84)_2021m.pdf#page=4)).
- 38) **Toma, V. A.**, Colnita, A., Brezestean, I., Dume, B., Roman, I., & Turcu, I. (2021). The complementary role of the RAMAN microspectroscopy to the oxidative stress assays in the neonatal synaptosomes characterization. *Studia Universitatis Babeş-Bolyai, Chemia*, 66(3).
- 39) Opris, R. V., **Toma, V.**, Baciu, A. M., Moldovan, R., Dume, B., Berghian-Sevastre, A., ... & Florea, A. (2022). Neurobehavioral and ultrastructural changes induced by phytosynthesized silver-nanoparticle toxicity in an in vivo rat model. *Nanomaterials*, 12(1), 58 (<https://www.mdpi.com/2079-4991/12/1/58>).
- 40) Negrea, G., Rauca, V. F., Meszaros, M. S., Patras, L., Luput, L., Licarete, E., ... & Banciu, M. (2022). Active tumor-targeting nano-formulations containing simvastatin and doxorubicin inhibit melanoma growth and angiogenesis. *Front. Pharmacol.* 13: 870347. doi: 10.3389/fphar. 2022.870347.

RESEARCH PROJECTS

PN-III-P1.2-PCCDI-2017-0387 "Emerging technologies for the industrial capitalization of 2D structures (graphene and nongraphenic)"
National Core Programs: PN16-30 02 03, PN09-440.213, PN 09-360.202

RESEARCH FELLOWSHIPS

SOE Scholarship (DAAD Stipendium), Universität Leipzig 2015/2016, 6 months.

World Federation of Scientist, Switzerland, 2014/2015, 12 months

Scientific Fellowship, project name: "The action of hyoscine N-butylbromide on the skeletal muscle contraction in Wistar rat", School of Biology and Geology, Babeş-Bolyai University, Romania, 2012-2013 (coordinator). months

HONOURS

LabRoots California, USA (2016)

Romanian Association of Laboratory Medicine (2016)

National Conference of the Romanian Association of Pure and Applied Biophysics (2016)

Romanian Association of Psychologist (2016)

Romanian Society for Cell Biology (2013, 2014, 2015, 2016)

Romanian Society of Chemistry (2014)

International Symposium Prospects for the 3rd Millenium Agriculture (2014)

Oncology's days, Institute of Oncology "Ion Chiricuța" (2014)

PRIZES (THE MOST RELEVANT)

▪ Excellence Prize for Institutional Development , Babeş-Bolyai University, 2018.

▪ Excellence Prize for Interdisciplinary Research, Student College for Academic Performance, 2014-2015.

▪ Second Prize for the presentation in 7th National Congress of RSCB, Baia-Mare, 2015.

▪ First Prize at 6th National Congress of RSCB, Tirgu-Mures, 2014.

▪ *Excellentia* Prize, Babeş-Bolyai University, 2013.

▪ First Prize in *Practice in Biology* POSDRU *Convergența pregătirii universitare cu viața activă*, Cluj-Napoca, Babeş-Bolyai

University, 2011.

AFFILIATIONS

Romanian Society for Cell Biology, member (2013 - present)

SPECIALIZED COURSES

The Teen Brain: Insights from Neuroimaging, Course, CME Consultants in association with LabRoots, Inc, CA, USA (2016)

Regulation and Function of Neurogenesis in the Adult Hippocampus, Course, CME Consultants in association with LabRoots, Inc, CA, USA (2016)

The Neurobiology of Temperament and Mood, Course, CME Consultants in association with LabRoots, Inc, CA, USA (2016)

Dr. Vlad-Alexandru TOMA, PhD

12.04.2022

