

## Curriculum Vitae

### PERSONAL INFORMATION:

**Surname:** Gruia

**First and Middle Names:** Alexandra Teodora

**Nationality:** Romanian

**Date and Place of Birth:** 03.24.1982, Timisoara, Timis, Romania

**Place of Issuance City:** Timisoara

**State/Province:** Timis

**Country:** Romania

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### EDUCATION:

- 2007-2014 – PhD studies (Thesis: Virtual Screening for Ligands of Adrenergic Receptors  $\alpha_2$ ), Institute of Chemistry of Romanian Academy Timisoara (<http://acad-icht.tm.edu.ro/en/index.htm>).
- 2005-2007 – Master Degree in Transdisciplinary Study of Environmental Protection (Dissertation: Antioxidants – Characterization and Role), Chemistry-Biology-Geography Faculty, West University of Timisoara.
- 2001-2005 – Bachelor Degree in Chemistry-Biology (Thesis: Seabuckthorn, between value and valorification), Chemistry-Biology-Geography Faculty, West University of Timisoara (<http://www.chimie.uvt.ro/index.php?lg=en>).
- 2001-2005 – Teacher Training Module, West University of Timisoara ([www.dppd.uvt.ro](http://www.dppd.uvt.ro)).

### WORK EXPERIENCE:

1. November 2005 – present, Emergency Clinical County Hospital Timisoara, 10 Bv. Iosif Bulbuca, Romania, Immunology of Transplant Department (<http://www.umft.ro/newpage/cifbtm/>), Research Assistant – Chemist.

Main activities and responsibilities:

- Analytical Chemistry (HPLC, GC-MS, GC-FID);
- *In vitro* (cytotoxicity) and *in vivo* studies;
- Immunology Techniques: flowcytometry, immunohistochemistry, immunofluorescence;
- Molecular biology techniques: RNA, DNA extraction; electrophoresis, PCR technique; quantitative real-time PCR.

2. January 2008 – October 2010, Institute of Chemistry Timisoara of Romanian Academy, 24 Bv. Mihai Viteazu, Timișoara, Romania, Computational Chemistry Department (<http://acad-icht.tm.edu.ro/proiecte/idei/idei.htm>), Research Assistant – Chemist.

Main activities and responsibilities:

- QSAR;
- Data bases;
- Conformational analysis;
- Molecular modeling.

3. Short-term scholarship, July 8<sup>th</sup>-September 4<sup>th</sup> 2008, Division of Biocomputing, The University of New Mexico, Albuquerque. (<https://vivo.health.unm.edu/display/n7948>)

- Data mining;
- Virtual screening;
- Molecular modeling.

4. A stage of 5 weeks (February-March 2011 and February-March 2012) at Eastern Energy Resources Science Center, US Geological Survey, Reston, Virginia.

(<http://energy.usgs.gov/Coal/AssessmentsandData/CoalQuality.aspx>)

#### Main activities and responsibilities:

- Field work: to collect samples (water, soil, coal, plants).
- To process samples in laboratory.
- To analyze samples: LC-MS, GC-MS.

#### COURSES:

- „Pathologie et Pharmacologie Moleculaires. Biotechnologies”, a XII-a edition of summer course of West University „Vasile Goldis” of Arad, July 2006;
- Mitofood meeting, Action FA0602: Bioactive food components, mitochondrial function and health, COST-FA0602, Debrecen, 01.06.09-02.06.09.
- EMBO Practical Course, Lipid Mass Spectrometry and Lipidomics, 19-24 August 2012, Swansea, United Kingdom (<http://events.embo.org/12-lipid-ms/programme.html>).

#### ABSTRACTS:

1. **Gruia A**, Moldovan F, Ilie D, Ordodi VL, Orem WH, Lerch HE, Pavlovic N, Tatu CA, Paunescu V, Aristolochia clematitis and Balkan endemic nephropathy in Romania: is there a connesction?, 2006, 30(S1): 36-36. (IF 0.5)
2. CI Peev, CA Dehelean, CM Soica, GH Coneac, **AT Gruia**, The analysis of birch tree bark main components as toxicity on human mesenchymal stem cells, Conference: 45th Congress of the European-Societies-of-Toxicology Location: Rhodes, GREECE Date: OCT 05-08, 2008 Sponsor(s): European Soc Toxicol TOXICOLOGY LETTERS, Volume: 180, Supplement: 1, Pages: S100-S100.
3. Bojin MF, Paunescu V, Tatu C, Rosca A, Gavriluc O, Crisnic D, Bunu C, Tanasie G, Tatu C, **Gruia A**, Nistor D, Tumor microenvironment induces in human mesenchymal stem cells behaviour, Journal of Physiological Sciences, 2009, 59(S1): 443-443. (IF 1.899)
4. FM Bojin, CA Tatu, O Gavriluc, F Ciuculescu, M Cristea, A Rosca, S Anghel, **A Gruia**, D Crisnic, G Tanasie, C Tatu, D Nistor, C Bunu, V Paunescu, In vitro characterization of tumor-associated fibroblasts as supportive network for cancer development, International Immunology, 2010, 22 Supplement(1): iii167, ISSN 0953-8178.
5. Suresh M., Bojin F, Anghel S, **Gruia A**, Ordodi VL, Tatu C, Bone defect healing induced by mesenchymal stem cells, European Journal of Medical Research, 2010, 15, S1, 104-104. (IF 1.50)
6. Bojin MF, Gavriluc OI, Cristea IM, Gruia AT, Anghel S, Tatu CS, Tanasie G, Panaitescu C, Tatu CA, Paunescu V, Ouabain Inhibits in Vitro Proliferation of Tumour-associated Fibroblasts and Breast Cancer Cell Lines, Conference: 22nd Biennial Congress of the European-Association-for-Cancer-Research Location: Barcelona, SPAIN, 2012, Sponsor(s): European Assoc Canc Res, EUROPEAN JOURNAL OF CANCER, Volume: 48, Supplement: 5, Pages: S52-S52.

#### PUBLISHED PAPERS:

1. Daniel I. Hadaruga, Nicoleta G.Hadaruga, Adrian Ravis, **Alexandra Gruia**, Iulia Andreea Pinzaru, Thermal and Oxidative Stability of the *Allium Sativum L.* Bioactive Compounds/ $\alpha$ - and  $\beta$ -Cyclodextrin Nanoparticles, *Rev Chim*, 2007, 58(11):1009-1015.
2. C. Lazau, L. Mocanu, I. Miron, P. Sfirloaga, G. Tanasie, C. Tatu, **A. Gruia**, I. Grozescu, Consideration Regarding the Use of TiO<sub>2</sub> Doped Nanoparticles in Medicine, *Digest Journal of Nanomaterials and Biostructures*, 2007, 2(3):257 – 263.
3. Cristina A. Dehelean, Camelia Peev, Simona Cîntă-Pînzaru, Codruța Șoica, C.A Tatu, **Alexandra T. Gruia**, Preliminary *in vitro* studies on mesenchymal stem cells and melanoma cells of dry birch tree bark extract, *Farmacia*, 2007, LV(6):696-702.

4. Codruța M. Șoica, Cristina A. Dehelean, Camelia I. Peev, Georgeta Coneac, **Alexandra T. Gruia**, Complexation with hydroxypropyl- $\gamma$ -cyclodextrin of some pentacyclic triterpenes. Characterisation of their binary products, *Farmacia*, 2008, Vol.LVI, 2, 182-190.
5. Cristina A. Dehelean, Codruta Soica, Camelia Peev, **Alexandra T. Gruia**, Edward Seclaman, Physico-chemical and Molecular Analysis of Antitumoral Pentacyclic Triterpenes in Complexation with Gamma-cyclodextrin, *Rev Chim*, 2008, 59(8):887-890.
6. Maria Mracec, **Alexandra Gruia**, Ana Borota, Ramona Curpan, Liliana Halip, Mircea Mracec, Conformational Analysis of Dexmedetomidine, *Rev Chim*, 2009, 60(5):488-490.
7. Liliana Ostopovici Halip, Ana Borota, Maria Mracec, Ramona Curpan, **Alexandra Gruia**, Mircea Mracec, 3D Homology Model of the Alpha2a Adrenergic Receptor Subtype, *Rev Roum Chim*, 2009, 54(2), 157–161.
8. Maria Mracec, **Alexandra Gruia**, Ana Borota, Ramona Rad, Liliana Ostopovici, Mircea Mracec, QSAR study of a series of quinoline derivatives active on the alpha2 adrenergic receptor subtypes, *Rev Roum Chim*, 2009, 54(8):651-657.
9. Mirabela I. Cristea, **Alexandra T. Gruia**, Valentin L. Ordodi, Oana I. Gavriliuc, Ileana Scurtu, Violeta Moica, Simona Anghel, Florin Margineanu, Nikola Pavlovic, Elena Gai, Victor Dumitrascu, Fabian Tatu, Virgil Paunescu, Calin A. Tatu, Aristolochia Clematitis in Traditional Medicine Recipes: Toxin or Remedy?, *Central European Journal of Occupational and Environmental Medicine*, 2009, 15(1-2):7-18.
10. Liliana Ostopovici-Halip, Ana Borota, **Alexandra Gruia**, Maria Mracec, Ramona Rad Curpan, Mircea Mracec, 3D Homology model of the  $\alpha_{2B}$ -adrenergic receptor subtype, *Rev Roum Chim*, 2010, 55(5):343–348.
11. Valentin Ordodi, Gabriela-Alina Dumitrel, **Alexandra Gruia**, Mihai Iacob, Gheorghita Jinescu, Delia Perju, Electrochemical Microinstallation for Cytostatic Wastes Epuration, *Rev Chim*, 2010, 61(9):857-861.
12. Hadaruga, D.I.; Hadaruga, N.G.; Butnaru G.; Tatu. C.; **Gruia A.**, Bioactive microparticles (10): Thermal and oxidative stability of nicotine and its complex with beta-cyclodextrin, *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 2010, 68(1-2):155-164.
13. Paunescu V, Bojin FM, Tatu CA, Gavriliuc OI, Rosca A, **Gruia AT**, Tanasie G, Bunu C, Crisnic D, Gherghiceanu M, Tatu FR, Tatu CS, Vermesan S, Tumour-associated fibroblasts and mesenchymal stem cells: more similarities than differences, *J Cell Mol Med*, 2011, 15(3):635-46.
14. Ana Borota, Maria Mracec, **Alexandra Gruia**, Ramona Rad-Curpăn, Liliana Ostopovici-Halip, Mircea Mracec, A QSAR study using MTD method and Dragon descriptors for a series of selective ligands of  $\alpha_2C$  adrenoceptor, *Eur J Med Chem*, 2011, 46(3):877-84.
15. Nicoleta G. Hădărugă, Alina Gharibeh Branic, Daniel I. Hădărugă, **Alexandra Gruia**, Carmen Plesa, Corina Costescu, Aurel Ardelean, Alfa Xenia Lupea, Comparative Study of *Juniperus communis* and *Juniperus virginiana* Essential Oils: TLC and GC Analysis, *Journal of Planar Chromatography*, 2011, 24(2), 000–000.
16. Branic AG, Plesa CM, Hadaruga NG, Ardelean A, Hadaruga DI, Ordodi VL, **Gruia AT**, Lupea AX, A Comparative Study of *Juniperus communis* and *Juniperus virginiana* Extracts The Influence of method, solvent, and provenience, *REVISTA DE CHIMIE*, 2011, 62(5):508-513.
17. Alina Gharibeh Branic, Carmen-Manuela Plesa, Nicoleta Gabriela Hadaruga, Aurel Ardelean, Daniel Ioan Hadaruga, Valentin Laurentiu Ordodi, **Alexandra Teodora Gruia**, Alfa Xenia Lupea, A Comparative Study of *Juniperus communis* and *Juniperus virginiana* Extracts. The Influence of method, solvent, and provenience, *Rev Chim*, 2011, 62(5):508-513.
18. **Gruia AT**, Barbu-Tudoran L, Mic AA, Ordodi VL, Paunescu V, Mic FA, Arachidonic acid accumulates in the stromal macrophages during thymus involution in diabetes, *Histochem Cell Biol.*, 2011, 136(1):79-92.
19. Gabriela Tanasie, Florina Bojin, Valentin Ordodi, **Alexandra Gruia**, Oana Gavriliuc, Mirabela Cristea, Atena Galuscan, Cristina Dehelean, Roxana Vintila, Calin Tatu, Carmen Bunu Panaitescu, Virgil

- Paunescu, Epithelization of skin lesions in animal model treated with mesenchymal stem cells and derivatives, *Romanian Biotechnological Letters*, 2011, 16(2):6072-6079.
20. F. Bojin, V. Ordodi, S. Anghel, **A. Gruia**, O. Gavriluc, R. Georgescu, A. Galuscanu, R. Vintila, C.A. Tatu, C. Bunu, C. Tatu, G. Tanasie, V. Paunescu, Mesenchymal stem cells admix with biological scaffold heal bone defects in rat model, *Romanian Biotechnological Letters*, 2011, 16(3): 6218-6225.
  21. Liliana Halip, **Alexandra T. Gruia**, Ana Borota, Maria Mracec, Ramona F. Curpan, Mircea Mracec, 3D Homology Model of the  $\alpha_{2C}$ -Adrenergic Receptor Subtype, *Rev. Roum. Chim.*, 2012, 57(7-8): 763-768.
  22. Bojin FM, **Gruia AT**, Cristea MI, Ordodi VL, Paunescu V, Mic FA, Adipocytes differentiated in vitro from rat mesenchymal stem cells lack essential free fatty acids compared to adult adipocytes, *Stem Cells Dev.*, 2012 Mar 1; 21(4):507-12.
  23. Florina M. Boldeanu, **Alexandra T. Gruia**, Valentin L. Ordodi, Margit Serban, Peter Bader, Hermann Kreyenberg, Childhood Acute Lymphoblastic Leukemia: Detection of Minimal Residual Disease after Allogeneic Transplantation, *Revista Română de Medicină de Laborator*, 2012, 20(3):59-67.
  24. Jianu C, Misca C, Pop G, Rusu LC, Ardelean L, **Gruia AT**, Chemical Composition and Antimicrobial Activity of Essential Oils Obtained from Dill (*Anethum graveolens* L.) Grown in Western Romania, *REVISTA DE CHIMIE*, 2012, 63(6):641-645.
  25. Madian Rafailă, Mihai-Cosmin Pascariu, **Alexandra Gruia**, Mircea Penescu, Victor Lorin Purcarea, Mihai Medeleanu, Lucian-Mircea Rusnac, Corneliu-Mircea Davidescu, GC-MS analysis of long chain mannofuranose derivatives as biocompatible surfactant precursors. Correlation between peak intensities and stability of corresponding fragments, *Farmacia*, 2013, 61(1):116-126.
  26. Jianu C., G. Pop, **A.T. Gruia**, F.G. Horhat. Chemical composition and antimicrobial activity of essential oils of lavender (*Lavandula angustifolia*) and lavandin (*Lavandula x intermedia*) grown in Western Romania. *Int. J. Agric. Biol.*, 2013, 15: 772-776.
  27. Radu Dumitru Moleriu, Daniela Zaharie, Lavinia Cristina Moatar-Moleriu, **Alexandra Teodora Gruia**, Ani Aurora Mic, Felix Aurel Mic, Insights into the mechanisms of thymus involution and regeneration by modeling the glucocorticoid-induced perturbation of thymocyte populations dynamics, *Journal of Theoretical Biology*, 2014, 348:80-99.
  28. Jianu Călin, Mișcă Corina, Muntean Simona Gabriela, **Gruia Alexandra Teodora**, Composition, antioxidant and antimicrobial activity of the essential oil of *Achillea collina* Becker growing wild in Western Romania, *Hemijška industrija*, 2014, (00):52-52.
  29. Carmen S. Tatu, Florina M. Bojin, **Gruia T. Alexandra**, Valentin L. Ordodi, Felix A. Mic, Iman Vlad, Ada Cean, Oana I. Gavriluc, Virgil Paunescu, Features of Lipid Metabolism along Differentiation Pathway of Human Mesenchymal Stem Cells towards Mature Adipocytes, *Romanian Biotechnological Letters*, 2014, 19(2): 9257-9271.
  30. Călin Jianu, Ionuț Goleț, Corina Mișcă, Georgeta Pop, **Alexandra Teodora Gruia**, Antimicrobial properties and chemical composition of essential oils isolated from six medicinal plants grown in Romania against foodborne pathogens, *Journal of Essential Oil Bearing Plants*, 2014, accepted.
  31. **Gruia A**, Curpan R, Borota A, Halip L, Mracec M., Mracec M., Phenyl and imidazole ring rotation in neutral and protonated Dexmedetomidine. A semiempirical and *ab initio* study, *Rev.Roum.Chim.*, 2014, 59:6-7, 605-612.
  32. Daniel I. Hadaruga, Nicoleta G. Hadaruga, Corina I. Costescu, Ioan David, **Alexandra T. Gruia**, Thermal and oxidative stability of the *Ocimum basilicum* L. essential oil/ $\beta$ -cyclodextrin supramolecular system, *Beilstein J. Org. Chem.*, accepted 20 Nov.2014.
  33. Cristina Botineștean, **Alexandra Teodora Gruia**, Ionel Jianu, Utilization of seeds from tomato processing wastes as raw material for oil production, *J Mater Cycles Waste Manag*, 2015, 17:1, 118-124.
  34. **Gruia AT**, Suci M, Barbu-Tudoran L, Azghadi SM, Cristea MI, Nica DV, Vaduva A, Muntean D, Mic AA, Mic FA. Mesenchymal Stromal Cells Differentiating to Adipocytes Accumulate Autophagic Vesicles Instead of Functional Lipid Droplets. *J Cell Physiol*. 2015 Sep 1. doi: 10.1002/jcp.25177.

35. Suciu M, Gruia AT, Nica DV, Azghadi SM, Mic AA, Mic FA. Acetaminophen-induced liver injury: implications for temporal homeostasis of lipid metabolism and eicosanoid signaling pathway. Chem Biol Interact. 2015 Oct 29. pii: S0009-2797(15)30097-1. doi: 10.1016/j.cbi.2015.10.019.

**Monografie:** Albulescu Mariana, Gruia Alexandra, “Catina, intre valoare si valorificare”, Eurobit Edition, Timisoara, ISBN973-620-176-7, 2005, 78 pg.

**Brevet: Procedeu de valorificare a materialelor neconventionale de catina**, nr. A/01069, 22.12.2005, Autori: Albulescu Mariana, Gruia Alexandra, Popovici Marinela.

#### **RESEARCH ASSISTANT IN RESEARCH PROJECTS:**

1. The Obtaining of nanocomposites/nanocrystals with applications in biotechnology, agriculture, alimentation, health and environmental protection, (NUSA), PC-D02-PT04-514, 2005-2007;
2. Novel strategies for immune response modulation in the elderly: The impact of telomerase and of apoptosis on the T cell immunosenescence process, (SENTAP), CEEX PCD, No.1068/2006, 2006-2008.
3. The Study of Implementation of Some Vegetal Antitumor Triterpenic Bioproducts Inclusive by Inclusion in Nanostructures, in Cutaneous Therapies by their Efficacy/Toxicity Analysis, PNCD II IDEAS, No.1257/2007, 2007-2010.
4. Development of a phytopharmaceutical product for additional therapy and of prevention of mammary neoplasia, INOVATION, No.69/2007, 2007-2010.
5. Virtual Screening for Ligands of Adrenergic Receptors, PNCD II IDEAS, No. 248/2007, 2007-2010.
6. Genetic Engineering of Cancer Stem Cells for Immune Response Modulation in Cancers of Non-Viral Origin, (ONCOSTEM), CEEX PCD, No.1276/2007, 2007-2010.
7. Novel Therapeutical Strategies of immunosenescence and senescence process, (AGEing), CEEX PCD, No.1202/2007, 2007-2010.
8. Hypoglycemic and Antioxidant Nutritional Supplements with Antocianidine Structure, (ACRONIM SAHASA), CEEX PCD, No.2431/2008, 2008-2011.
9. Cardioprotective Strategies at Reperfusion – Mitochondria as Multiple Therapeutic Target, (CARDIO-MITO-PROT), CEEX PCD, No.2560/2008, 2008-2011.
10. The molecular mechanisms of thymus involution in diabetes (DIATIM), CEEX PCD, No.1438/2008, <http://www.hosptm.ro/proiectul-420982008/>, 2008-2010.
11. Modeling and simulation of the dynamics of thymocyte populations and cells of the thymus medulla under normal and pathological situations, PN-II-ID-PCE-2011-3-0571, <http://simtim.umft.ro/>, 2011-2015.
12. PN-II-RU-TE-2014-4-0151, Tatu Calin, Environmental factors and epigenetic mechanisms – a common bond in ethiology of kidney chronic diseases.
13. PN-II-RU-TE-2014-4-0608, Barbu-Tudoran Lucian, Characterization of effects at subcellular level of functionalized magnetic nanoparticles in targeted anti-tumoral therapy.
14. PN-II-RU-TE-2014-4-0776, Nica Dragos, An epitoxicogenomic approach of Cadmium's hepatotoxicity: a gasteropod model.

#### **LANGUAGES:**

- English – C1; French – B2; German – B1.