Laboratorul Cercetare a Radicalilor Liberi

Certificat CNCSIS nr.65/2005

ADRESA

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Conf.univ. dr. Claudia CIMPOIU
Conf.univ. dr. Adina GHIRISAN
Asist. univ.dr. Ana-Maria HOSU
Drd. Laura BOLOJAN,
Drd. István Mihály TAKÁCS

DOMENII DE CERCETARE

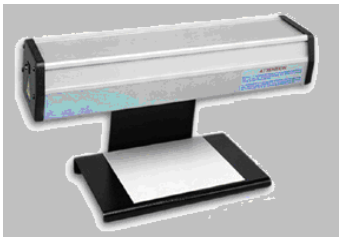
Cercetare stiintifica interdisciplinara teroretica si experimentala a radicalilor liberi in fizica biomaterialelor, compusi biofarmaceutici, fizico-chimia mediului, reactii catalitice, reactii de polimerizare, fiziopatologia umana, animala si vegetala, in alte sisteme care implica prezenta radicalilor

ECHIPAMENTE ŞI FACILITATI

1. Spectrometru de Rezonanţă Electronică Paramagnetică Bruker EMXmicro, X band, unitate de temperatură variabilă (ER4141VT)
2. Spectrofotometru UV-vis
3. Liofilizator LABCONCO
4. Lampă UV, Vilber Lourmat, 254 nm
5. Desktop Toshiba, computer HDD 2x250 GB Western Digital KS Western Digital Extern, specialized software Origin 7.5, Grams/AI, Winsim, Powfit, EPRSIM, Bruker Simfonia

Electron Paramagnetic Resonance spectrometer
Bruker EMXmicro, X band,
variable temperature unit (ER4141VT)

UV-vis spectrophotometer T80



Lampă UV, Vilber Lourmat

Lyophilizer *LABCONCO*

TEME DE DOCTORAT

Drd. Laura BOLOJAN,

Caracterizarea radicalilor liberi din sisteme biomedicale şi biofarmaceutice

Drd. Ioan CSILLAG,

Utilizarea metodelor spectroscopice în studiul efectelor radiaţiilor asupra sistemelor moleculare

Drd. István Mihály TAKÁCS

Investigation of some oxygen-transport proteins by EPR spectroscopy

Free Radicals Research Laboratory

Certified by CNCSIS nr.65/2005

ADDRESS

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Drd. Laura BOLOJAN,
Drd. István Mihály TAKÁCS

RESEARCH TOPICS

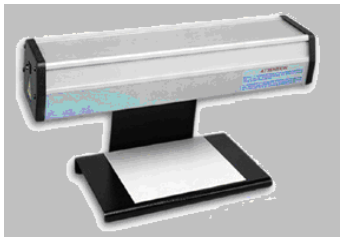
Interdisciplinary theoretical and experimental studies of free radicals in biomedical physics, bio-material physics, bio-pharmaceutical compounds, in the physics and chemistry of the environment, catalytically reactions, polymerization reactions, human, animal and vegetal physiopathology and other systems which involves the presence of free radicals.

MAIN EQUIPMENTS

1. Electron Paramagnetic Resonance spectrometer, Bruker EMXmicro, X band, variable temperature unit (ER4141VT)
2. UV-Vis Spectrophotometer
3. Liophilizer LABCONCO
4. UV lamp UV, Vilber Lourmat, 254 nm
5. Desktop Toshiba, computer HDD 2x250 GB Western Digital KS Western Digital Extern, specialized software Origin7.5, Grams/AI, Winsim, Powfit, EPRSIM, Bruker Simfonia

Electron Paramagnetic Resonance spectrometer Bruker EMXmicro, X band, variable temperature unit (ER4141VT)

UV-vis spectrophotometer T80



Lampă UV, Vilber Lourmat

Lyophilizer *LABCONCO*

PhD PROJECTS

- PhD student Laura Bolojan, *Characterization of free radicals in biomedical and biopharmaceutical systems*
- PhD student Ioan CSILLAG, *The utilization of the spectroscopic methods to study the radiation effects on the molecular systems*
- PhD student István Mihály TAKÁCS: *Investigation of some oxygen-transport proteins by EPR spectroscopy*

RECENT PUBLICATIONS

1. Bensouici, A. ; Ayadi, M. ; Iosin, M. ; Damian, G. ; Plaza, J.L. ;Astilean, S. ; Sebais, M. ,(2013), Chemical decomposition of CdTe and CdBr2 dopants in KBr, *15th International Conference on Transparent Optical Networks (ICTON 2013)*, DOI: 10.1109/ICTON.2013.6602899, p. 1-3
2. Pompei Bolfa, Raluca Vidrighinescu, Andrei Petruta, Dan Dezmirean, Laura Stan, Laurian Vlase, Grigore Damian, Cornel Catoi, Adriana Filip, Simona Clichici,(2013), Photoprotective effects of Romanian propolis on skin of mice exposed to UVB irradiation, *Food and Chemical Toxicology*, 62, *329-342*
3. Augustin Cătălin Moţ, Cristina Coman, Carmen Miron, Grigore Damian, Costel, Sarbu, Radu Silaghi-Dumitrescu (2013), An assay for pro-oxidant reactivity based on phenoxyl radicals generated by Laccase, *Food Chemistry*, http://dx.doi.org/10.1016/j.foodchem.2013.07.128

4. Delia Marcu , Grigore Damian, Constantin Cosma and Victoria Cristea, (2013), Gamma radiation effects on seed germination, growth and pigment content, and ESR study of induced free radicals in maize (*Zea mays*), *Journal of Biological Physics*, doi: 10.1007/s10867-013-9322-z
5. Daniela Benedec, Laurian Vlase, Ilioara Oniga, Augustin C. Mot, Grigore Damian, Daniela Hanganu 1, Mihaela Duma and Radu Silaghi-Dumitrescu, (2013), Polyphenolic Composition, Antioxidant and Antibacterial Activities for Two Romanian Subspecies of *Achillea distans* Waldst. et Kit. ex Willd, *Molecules*, *18(8)*, 8725-8739; doi:10.3390/molecules18088725
6. Istvan Mihaly Takacs, Augustin Mot, Radu Silaghi-Dumitrescu, Grigore Damian, (2013) Site directed spin labeling Hemerythrin and hemoglobin, *Studia UBB, seria Chemia*, 58(2), pp. 61-69,
7. Jean de Dieu Tamokou, Jean Rodolphe Chouna, Eva Fischer-Fodor, Gabriela Chereches, Otilia Barbos, Grigore Damian, Daniela Benedec, Mihaela Duma, Alango Pépin Nkeng Efouet, Hippolyte Kamdem Wabo, Jules Roger Kuiate, Augustin Mot, Radu Silaghi-Dumitrescu (2013) , Anticancer and Antimicrobial Activities of Some Antioxidant-Rich Cameroonian Medicinal Plants, *PLoS ONE*, e55880, 8(2), pp. 1-14
8. C. Ivaşcu, I.B. Cozar, L. Dărăban, G.Damian, (2013) Spectroscopic investigation of P_2O_5–CdO–Li_2O glass system, J*ournal of Noncrystalline Solids*, 359, pp 6064, http://dx.doi.org/10.1016/j.jnoncrysol.2012.10.008
9. Todica, M. , Udrescu, L., Damian, G., Astilean, S. (2013), Spectroscopic investigation of PVA-TIO2 membranes gamma irradiated, Journal of Molecular Structure, 1044, pp 328–330, http://dx.doi.org/10.1016/j.molstruc.2012.12.006
10. Augustin C. Moţ, Marcel Pârvu, Grigore Damian,Zsuzsanna Darula, Katalin F. Medzihradszky, Balazs Brem, Radu Silaghi-Dumitrescu (2012), A "yellow" laccase with "blue" spectroscopic features, from *Sclerotinia sclerotiorum, Process Biochemistry*, 47(6), pp. 968-975, doi.org/10.1016/j.procbio.2012.03.006
11. Daniela Cioloboc, Adrian-Raul Tomşa, Grigore Damian, Radu Silaghi-Dumitrescu (2012), High spin to low spin change induced by reductive chemistry with iron-substituted Dawson polyoxometalate, *Inorganic Chemistry Communications*, doi: 10.1016/j.inoche.2012.02.019
12. Laura Bolojan, István Mihály Takács, Vasile Miclaus and Grigore Damian (2012). EPR study of superoxide radicals from potassium superoxide.*Applied Magnetic Resonance*, 42(3), pp. 333-341, DOI: 10.1007/s00723-011-0310-9
13. Nicoleta Simona Vedeanu, Dana Alina Magdas, Laura Bolojan and Grigore Damian (2012). Antioxidant potential and authenticity of some commercial fruit juices studied by EPR and IRMS. *Chemical Papers*, 66(6), pp**.** 612-616, DOI: 10.2478/s11696-011-0115-1
14. Augustin C. Mot, Sergei A. Syrbu, Sergei V. Makarov, Grigore Damian, Radu Silaghi-Dumitrescu (2012). Axial ligation in water-soluble copper porphyrinates: contrasts between EPR and UV–vis. *Inorganic Chemistry Communications*, 18, pp. 1-3, doi.org/10.1016/j.inoche.2011.12.030
15. Dana Alina Magdas, Nicoleta Simon Vedeanu, Laura Bolojan, Romulus Puscas, Grigore Damian (2011). Comparative study between single strenght juice and commercial natural juices by IRMS and EPR. *Studia Universitatis Babes-Bolyai Chemia*, LVI, 2 , pp. 19 – 27.
16. Doina Prodan, Laura Silaghi-Dumitrescu, Prejmean Cristina, Radu Silaghi-Dumitrescu,

Laura Bolojan, Grigore Damian (2011), Evaluation of Free Radical Concentration in Some New Dental Composite Materials by ESR Spectroscopy. *Studia Univrsitatis Babes–-Bolyai, Chemia*, Volume 56 (LVI), pp. 201-206.

17. Bianca Iacob, Florina Deac, Daniela Cioloboc, Grigore Damian, Radu Silaghi-Dumitrescu (2011), Hemoglobin-albumin crosslinked copolymers: reduced prooxidant reactivity. *Artificial Cells, Blood Substitutes and Biotechnology*, 39(5), pp. 293-297, doi:10.3109/10731199.2011.563362
18. Cristina Bischin, Florina Deac, Radu Silaghi-Dumitrescu, Jonathan A. R. Worrall, Badri S. Rajagopal, Grigore Damian and Chris E. Cooper (2011), Ascorbate peroxidase activity of cytochrome c*, Free Radical Research*, 45(4), pp. 439-444
19. Dana Alina Magdas, Nicoleta Simona Vedeanu, Laura Bolojan, Romulus Puscas and Grigore Damian (2011), Comparative study between single strength juice and commercial natural juice by IRMS and EPR, *Studia UBB, Chemia*, LVI, 2, pp 19-27
20. Deac Florina, Iacob Bianca, Eva Fischer-Fodor, Grigore Damian, Radu Silaghi-Dumitrescu (2011), Derivatization of hemoglobin with periodate-generated reticulation agents: evaluation of oxidative reactivity for potential blood substitutes, *Journal of Biochemistry*, 149 (1), pp. 75-82.
21. Anamaria Hosu, Claudia Cimpoiu, Vasile Miclaus, Grigore Damian, Irina Tarsiche, Nastasia Pop (2010), Influence of Intermittent Heating during Maceration on the Antioxidant Capacity of some Grape Seeds and Skins, *Not. Bot. Hort. Agrobot. Cluj* 38 (1), pp. 41-43
22. Augustin Mot, Kis Zoltan, Dimitri A. Svistunenko, Grigore Damian, Radu Silaghi-Dumitrescu, Sergei V. Makarov (2010), 'Super-reduced' iron under physiologically-relevant conditions, *Dalton Trans*, 39, pp.1464-1466
23. *Anamaria Hosu, Claudia Cimpoiu, Mihaela Sandru, Liana Seserman, Determination of the antioxidant activity of juices by thin-layer chromatography, JPC - Journal of Planar Chromatography - Modern TLC, 23(2010) 1, 14-17*
24. Claudia Cimpoiu, Anamaria Hosu, Liana Seserman, Mihaela Sandru, Vasile Miclaus, Simultaneous determination of methylxanthines in different types of tea by a newly developed and validated TLC method, 33(2010), 23-24, 3794–3799
25. Augustin-Catalin Mot, Grigore Damian, Costel Sarbu, Radu Silaghi-Dumitrescu (2009), Redox reactivity in propolis: direct detection of free radicals in basic medium and interaction with hemoglobin, *Redox Report*, 14(6), pp. 267-274(8)
26. Adrian-Raul Tomşa, Daniela Cioloboc, Ana Maria Todea, Radu Silaghi-Dumitrescu, Grigore Damian, and Mariana Rusu (2009), Synthesis, spectroscopic and electrochemical characterization of new Chromium (III) substituted Dawson polyoxometalate, *Studia Universitatis Babes-Bolyai, Chemia* , LIV, 4, pp. 95-105