

CURRICULUM VITAE

Nume si prenume: Norica Beatrice Nichita (Branza-Nichita)

Data si locul nasterii: 12 Aprilie 1970

Adresa (acasa):

Adresa (locul de munca): Institutul de Biochimie (IBAR), Splaiul Independentei 296, Sector 6

Nationalitate: Romana

Educatie si formare:

2000-2001 Studii post-doctorale, Universitatea Oxford, Departamentul de Biochimie

2000 Doctorat in Biologie, specialitatea Biochimie, Institutul de Biochimie al Academiei Romane, Bucuresti.

1993-1994 Student TEMPUS, Laboratorul de Oncologie Moleculara, Departamentul de Genetica Umana, Universitatea Catolica Leuven, Belgia .

1988-1993 Licenta, Facultatea de Biochimie, Universitatea Bucuresti, sef promotie

Limbi straine cunoscute : Engleza (fluent), franceza (fluent), rusa (citit, scris).

Cariera stiintifica:

2014 Cercetator Stiintific gradul I

2011- in prezent Director -adjunct IBAR

2005-2014 Cercetator Stiintific gradul II, Sef Departament Glicoproteine Virale, Institutul de Biochimie, Bucuresti. Grupul este implicat in studiul morfogenezei HBV, dezvoltarea de strategii noi pentru imbunatatirea transportului compusilor antivirali in celulele infectate si investigarea la nivel molecular a etapelor timpurii caracteristice infectiei cu HBV.

2001-2005 Cercetator Stiintific gradul III, Institutul de Biochimie, Bucuresti si Wellcome Trust "Academic Visitor" (3 luni/an), Universitatea Oxford, Departamentul de Biochimie, Institutul de Glicobiologie (pana in 2007). Proiectele de cercetare s-au concentrat asupra rolului a-glucozidazelor din RE in asamblarea virusurilor anvelopate si mecanismului de actiune a iminoglicidelor cu activitate antivirala fata de HBV.

2000-2001 Cercetator postdoctoral, bursier Royal Society, Universitatea Oxford, Departamentul de Biochimie, Institutul de Glicobiologie. Proiectul postdoctoral a avut ca subiect determinarea cailor de pliere a proteinelor de anvelopa a BVDV (pestivirus folosit ca model surogat *in vitro*, pentru studierea HCV) si de asemenea, dezvoltarea de derivati iminoglicidici ca inhibitori ai asamblarii virale.

1997-2001 Cercetator Stiintific, Institutul de Biochimie Bucuresti si bursier NATO-Universitatea Oxford, Departamentul de Biochimie, Institutul de Glicobiologie (3 luni/an, pana in 1999). Teza de doctorat s-a focusat pe descifrarea mecanismelor moleculare care controleaza plierea proteinelor in RE si intelegerea rolului glucidelor N-legate in acest proces.

1992-1997 Cercetator stagiar (1992-1993), Asistent cercetare stagiar (1993-1994), Asistent cercetare (1994-1997), pozitii detinute la Institutul de Biochimie Bucuresti; 1996 (6 luni) Asistent cercetare (bursa PECO), Laboratorul de Chimie Biologica, Universite des Sciences et Technologies, Lille, Franta. Proiectul primit a avut ca subiect clonarea si caracterizarea unor variante mutante derivate de la lactoferina umana; 1995 (3 luni) Asistent cercetare (bursa PICS), Centre de Recherches sur les Macromolécules Végétales-CNRS, Université Joseph Fourier, Grenoble, France. Tema de cercetare s-a referit la identificarea unor liganzi specifici lectinei izolate din Datura innoxia.

Cariiera didactica:

2015 Cadru didactic asociat Universitatea POLITEHNICA din București, Facultatea de Stiinta și Ingineria Materialelor, anul IV Inginerie Medicala, curs „Biologie celulara”.

2006-2007 Cadru didactic asociat Universitatea București, Facultatea de Chimie, anul II master, curs “Tehnologia ADN recombinant”

1998, 1999 Cadru didactic asociat Universitatea București, Facultatea de Chimie, anul V, curs “Tehnologia ADN recombinant”

2005, 2008 Conducere lucrări licenta (2) si master (2), studenti ai Facultatii de Chimie si ai Facultatii de Biologie, Universitatea Bucuresti.

Domenii stiintifice de interes :

Biologie celulara si moleculara, proteine eucariote si virale; biosinteza, glicozilare, pliere, degradare, trafic intracelular, secretie, prezentare antigen ; morfologie virala ; identificare de compusi cu activitate antivirala, mecanism de actiune ; tehnologia ADN recombinat

Alte activitati:

1. Membru in societati si organizatii:

2016- Vicepresedinte al Comisiei de Biologie si Biochimie a Consiliului National de Atestare a Titlurilor, Diplomelor si Certificatelor Universitare (CNATDCU)

2006-2015 Secretar Stiintific al Societatii Romane de Biochimie si Biologie Moleculara (SRBBM)

2011- 2013 Membru al Consiliului National al Cercetarii Stiintifice (CNCS)

2011- 2013 Presedinte al Comisiei de Biologie a CNCS

2011-2013 Membru al Comisiei de Biologie si Biochimie a CNATDCU

2. Evaluare stiintifica

2016 - Evaluator Marie Curie Fellowships Comisia Europeana, Panel Life Sciences

2014-2015- Evaluator proiecte USA-Israel Binational Science Foundation

2014 PhD External Examiner Universitatea Oxford, Co-examiner: Prof. Sir Andrew Mc. Michael, candidat PhD student Simon Spiro.

2007- Evaluare granturi in competitii nationale (IDEI, TE, PD)

2004- Evaluare pentru jurnale international (peer-reviewer): Hepatology, Autophagy, PlosOne, Gene, Trends in Biotechnology, Journal of Cellular and Molecular Medicine, Frontiers Microbiology, Molecular Biology Reports, Antiviral Research, Virology, Liver International, Biomolecules, Current

HIV Research, Proteome Science, Melanoma Research, Australian Journal of Chemistry, Journal of Gastroenterology and Hepatology, Bioorganic and Medicinal Chemistry, etc.

Indicatori scientometrici:

Indice Hirsh: 20, conform WOS

Articole ISI in extenso cu factor de impact: 45

Articole BDI in extenso: 9

Citări (WOS) > 1000

Factorul de impact însumat: > 170

Capitole carti: 3

Brevete internationale: 3

LISTA DE LUCRARI

a) Teza de doctorat

„Investigarea mecanismului de pliere a tirozinazei, prin mutageneza in situ”- nepublicata, depusa la Biblioteca Institutului de Biochimie (2000).

b) Capitole de carti

1. "Molecular Regulation of Endocytosis", book edited by Brian Ceresa, Intech, ISBN 978-953-51-0662-3, Chapter 7, Caveolae-Dependent Endocytosis in Viral Infection, authors Norica Branza-Nichita, Alina Macovei and Catalin Lazar , DOI: 10.5772/48538 (2012).

2. "Antiviral Activity of Lactoferrin: From Basic Research to Medical Applications", authors Paula E Florian, Catalin Lazar, Norica Nichita and Anca Roseanu, Nova (NY, USA), Chapter 3, 205-246 (2014)

3. Advancements of Mass Spectrometry in Biomedical Research book edited by Alisa G. Woods & Costel C. Darie, Series Title: Advances in Experimental Medicine and Biology Series , Springer, ISSN: 0065-2598, Chapter title" Using proteomics to unravel the mysterious steps of the HBV life-cycle" Authors: Norica Branza-Nichita, Catalina Petrareanu, Catalin Lazar, Izabela Sokolowska and Costel C. Darie , Chapter 22, 453-482 (2014)

c) Articole in extenso din fluxul stiintific principal

c1. Internationale (ISI)

1. Mihaela-Olivia Dobrica, Catalin Lazar, Lisa Paruch, Andrévan Eerde, Jihong Liu Clarke, Catalin Tucureanu, Iuliana Caras, Sonya Ciulean, Adrian Onu, Vlad Tofan, Alexandru Branzan, Stephan Urban, Crina Stavaru, Norica Branza-Nichita. Oral administration of a chimeric Hepatitis B Virus S/preS1 antigen produced in lettuce triggers infection neutralizing antibodies in mice. Vaccine, doi.org/10.1016/j.vaccine.2018.07.072.

2. Liu Clarke J, Paruch L, Dobrica MO, Caras I, Tucureanu C, Onu A, Ciulean S, Stavaru C, Eerde A, Wang Y, Steen H, Haugslie S, Petrareanu C, Lazar C, Popescu CI, Bock R, Dubuisson J and Branza-Nichita N. „Lettuce-produced hepatitis C virus E1E2 heterodimer triggers immune responses in mice and antibody production after oral vaccination". Plant Biotechnology Journal 15, 1611-1621 (2017).

3. Dobrica MO, Lazar C, Paruch L, Skomedal H, Steen H, Haugslie S, Tucureanu C, Caras I, Onu A, Ciulean S, Branzan A, Liu Clarke J, Stavaru C, Branza-Nichita N. „A novel chimeric Hepatitis B virus S/preS1 antigen produced in mammalian and plant cells elicits stronger humoral and cellular immune response than the standard vaccine-constituent, S protein". Antiviral Research, 144, 256-265 (2017).

4. Lazar, C, Uta, M, Petrescu, SM, **Branza-Nichita, N.** „Novel function of the endoplasmic reticulum degradation-enhancing alpha-mannosidase-like proteins in the human hepatitis B virus life cycle, mediated by the middle envelope protein”. *Cell. Microbiol.*, 19, e12653, DOI: 10.1111/cmi.12653 (2017)
5. Uta M, Sima LE, Hoffmann P, Dinca V, **Branza-Nichita N.** „Development of a DsRed-expressing HepaRG cell line for real-time monitoring of hepatocyte-like cell differentiation by fluorescence imaging, with application in screening of novel geometric microstructured cell growth substrates”. *Biomed Microdevices* 19, DOI: 10.1007/s10544-016-0146-z (2017).
6. Florian P, Rouille Y, Ruta S, **Nichita N, Roseanu A.** „Recent advances in human viruses imaging studies”. *Journal of Basic Microbiology*, DOI: 10.1002/jobm.201500575 (2016).
7. Carja G, Grosu EF, Petrareanu C, **Nichita N.** „Self-assemblies of plasmonic gold/layered double hydroxides with highly efficient antiviral effect against the hepatitis B virus.”, *Nano. Res.*, 8, 3512-3523 (2015)
8. Lazar C, Uta M, **Branza-Nichita N.** „Modulation of the unfolded protein response by the human hepatitis B virus”. *Frontiers Microbiology* 2014;5:433. doi: 10.3389/fmicb.2014.00433. eCollection (2014).
9. Rocha L, Paius C-M, Luca-Raicu A, Resmerita E, Rusu A, Moleavin I-A, Hamel M, **Branza-Nichita N, Hurduc N.** „Azobenzene based polymers as photoactive supports and micellar structures for applications in biology.”, *J.Photochem.Photobiol.*, 291, 16-25 (2014)
10. Hurduc N, Donose BC, Macovei A, Paius C, Ibanescu C, Scutaru D, Hamel M, **Branza-Nichita N, Rocha L.** „Direct observation of athermal photofluidisation in azo-polymer films.”, *Soft Matter.*, 10(26), 4640-4647 (2014)
11. Rowe IA, Galsinh SK, Wilson GK, Parker R, Durant S, Lazar C, **Branza-Nichita N, Bicknell R, Adams DH, Balfe P, McKeating JA.** “Paracrine signals from liver sinusoidal endothelium regulate hepatitis C virus replication”, *Hepatology*, 59 (2): 375-384 (2014)
12. Petrareanu C, Macovei A, Sokolowska I, Woods AG, Lazar C, Radu GL, Darie CC and **Branza-Nichita N.** „Comparative Proteomics Reveals Novel Components at the Plasma Membrane of Differentiated HepaRG Cells and Different Distribution in Hepatocyte- and Biliary-Like Cells”. *PLoS One*. 2013, 20;8(8):e71859.
13. Macovei A, Petrareanu C, Lazar C, Florian P and **Branza-Nichita N,** „Regulation of hepatitis B virus infection by rab5, rab7, and the endolysosomal compartment”. *Journal of Virology* 2013, 87(11):6415-27.
14. Florian PE, Macovei A, Lazar C, Milac AL, Sokolowska I, Darie CC, Evans RW, Roseanu A and **Branza-Nichita N.** „Characterization of the anti-HBV activity of HLP1-23, a human lactoferrin-derived peptide”. *Journal of Medical Virology* 2013, 85(5):780-8.
15. C. Ignea, C. Dorobanțu, C. Mintoff, N. **Branza-Nichita, M. Lodomery, P. Kefalas, V. Chedea,** “Modulation of the antioxidant / pro-oxidant balance, cytotoxicity and antiviral actions of grape seed extracts”, *Food Chemistry*, 2013, 141:3967-76
16. Hurduc N, Macovei A, Paius C, Raicu A, Moleavin I, **Branza-Nichita N, Hamel M, Rocha L.** “Azo-polysiloxanes as new supports for cell cultures.” *Mat.Sci.Eng.C.*, 33(4), 2440-2445 (2013).
17. Florian P, Macovei A, Sima L, **Nichita N, Mattsby-Baltzer I, Roseanu A.** „Endocytosis and trafficking of human lactoferrin in macrophage-like human THP-1 cells”. *Biochem Cell Biol.* 2012, 90(3):449-55.

18. Lazar C, Macovei A, Petrescu S and Branza-Nichita N. „Activation of ERAD pathway by human hepatitis B virus modulates viral and subviral particle production.” *PLoS One*. 2012;7(3):e34169
19. Sokolowska I, Dorobantu C, Woods AG, Macovei A, Branza-Nichita N, Darie CC. „Proteomic analysis of plasma membranes isolated from undifferentiated and differentiated HepaRG cells.” *Proteome Sci*. 2012 Aug 2;10(1):47
20. Cristina-Maria Păiuș, Alina Macovei, Norica Branza-Nichita, Licinio Rocha, Nicolae Hurduc. „Nanostructured azo-polysiloxanic films for biological applications”, *Env. Eng.Man.J*, 2012, 11, (11): 2029-2034.
21. Dorobantu C, Macovei A, Lazar C, Dwek RA, Zitzmann N and Branza-Nichita N. „Cholesterol depletion of hepatoma cells impairs hepatitis B virus envelopment by altering the topology of the large envelope protein.” *J Virol*. 2011, 85(24):13373-83.
22. A. Raicu Luca, L. Rocha, A.-M. Resmerita, A. Macovei, M. Hamel, A.-M. Maccim, N. Nichita, N. Hurduc. „Rigid and flexible azopolymers modified with donor/acceptor groups. Synthesis and photochromic behavior”, *eXPRESS Polymer Letters*, 2011, 5, (11): 959–969.
23. Epure, Elena-Luiza; Moleavin, Ioana Andreea; Taran, Elena, Ahn V. Nguyen, Norica Nichita, Nicolae Hurduc, „Azo-polymers modified with nucleobases and their interactions with DNA molecules „, *POLYMER BULLETIN*, 2011, 67 (3): 467-478.
24. Pollock S, Nichita NB, Böhmer A, Radulescu C, Dwek RA, Zitzmann N. „Polyunsaturated liposomes are antiviral against hepatitis B and C viruses and HIV by decreasing cholesterol levels in infected cells”. *Proc Natl Acad Sci U S A*. 2010, 107(40):17176-81.
25. Pollock S, Antrobus R, Newton L, Kampa B, Rossa J, Latham S, Nichita NB, Dwek RA, Zitzmann N. “Uptake and trafficking of liposomes to the endoplasmic reticulum”. *FASEB J*. 2010, 24(6):1866-78.
26. Macovei A, Radulescu C, Lazar C, Petrescu S, Durantel D, Dwek R, Zitzmann N and Branza-Nichita N. “Hepatitis B virus requires intact caveolin-1 function for productive infection in HepaRG cells”. *J. Virol.*, 84, 243-253 (2010).
27. Woodhouse, S.D, Smith C, Michelet M, Branza-Nichita N, Hussey M, Dwek RA, Zitzmann N. “Iminosugars in combination with interferon and ribavirin permanently eradicate noncytopathic bovine viral diarrhea virus from persistently infected cells”, *Antimicrobial Agents and Chemotherapy* 52, 1820-1828 (2008).
28. Lazar, C., D. Durantel, A. Macovei, N. Zitzmann, F. Zoulim, R.A. Dwek and N. Branza-Nichita. “Treatment of Hepatitis B virus- infected cells with alpha-glucosidase inhibitors results in production of virions with altered molecular composition and infectivity”, *Antiviral Res*. 76, 30-37 (2007).
29. Moriarty RM, Mitan CI, Branza-Nichita, N, Phares KR, Parrish, D. “exo-Imino to endo-iminocyclitol rearrangement. A general route to five-membered antiviral azasugars”. *Org Lett*. 3, 3465-3467 (2006).
30. Macovei A., Zitzmann N., Lazar C., Dwek R.A. and Branza-Nichita N. “Brefeldin A inhibits pestivirus release from infected cells, without affecting its assembly and infectivity” *Biochem. Biophys. Res. Commun*. 346, 1083-1090 (2006).
31. N. Branza-Nichita, Lazar C, Dwek RA, Zitzmann N. “Role of N-glycan trimming in the folding and secretion of the pestivirus protein E(rns).” *Biochem. Biophys. Res. Commun*. 319, 655-662 (2004).

32. Durantel, D., S. Carrouee- Durantel, N.Branza-Nichita, R.A. Dwek, N. Zitzmann. "Effect of interferon, ribavirin and iminosugar derivatives on viral infection in cells persistently infected with non-cytopathic BVDV: a comparative study". *Antimicrobial Agents and Chemotherapy* 48, 497-504 (2004).
33. C.Lazar, N. Zitzmann, R.A. Dwek and N.Branza-Nichita, "The pestivirus Erns glycoprotein interacts with E2 in both infected cells and mature virions", *Virology* 314, 669-675, (2003).
34. Costin G.E, M. Trif, N. Nichita, R.A. Dwek, S.M. Petrescu, "pH-sensitive liposomes are efficient carriers for endoplasmic reticulum-targeted drugs in mouse melanoma cells", *Biochem. Biophys. Res. Commun.*, 293, 918-923 (2002).
35. N.Branza- Nichita, Lazar C, Durantel D, Dwek RA, Zitzmann N. "Role of disulfide bond formation in the folding and assembly of the envelope glycoproteins of a pestivirus." *Biochem. Biophys. Res. Commun.*, 296, 470-476 (2002).
36. D. Durantel, N.Branza- Nichita, S. Durantel, R.A. Dwek, N. Zitzmann, "Study of the Mechanism of Antiviral Action of Iminosugar Derivatives against Bovine Viral Diarrhea Virus", *J. Virol.*, 75, 8987 (2001).
37. N.Branza-Nichita, D. Durantel, S. Durantel, R.A. Dwek, N. Zitzmann, "Antiviral Effect of N-Butyldeoxyjirimycin against Bovine Viral Diarrhea Virus Correlates with Misfolding of E2 Envelope Proteins and Impairment of their Association into E1-E2 Heterodimers", *J. Virol.*, 75, 3527 (2001).
38. N.Branza-Nichita, A.J. Petrescu, G. Negroiu, R.A.Dwek, S.M. Petrescu, "N-Glycosylation Processing and Glycoprotein Folding- Lessons from the Tyrosinase-Related Proteins", *Chemical Reviews* 100, 4697 (2000).
39. N.Branza-Nichita, G. Negroiu, A.J. Petrescu, E. Garman, F.M. Platt, M.R. Wormald, R.A.Dwek, S.M. Petrescu, "Mutations at Critical N-Glycosylation Sites Reduce Tyrosinase Activity by Altering Folding and Quality Control", *J. Biol. Chem.*, 275, 8169 (2000).
40. Petrescu S.M., N.Branza-Nichita, Negroiu G., Petrescu A.J., Dwek R.A., "Tyrosinase and Glycoprotein Folding: Roles of Chaperones That Recognize Glycans", *Biochemistry*, 39, 5229-5237 (2000).
41. N.Branza-Nichita, A.J. Petrescu, R.A.Dwek, M.R. Wormald, F.M. Platt, S.M. Petrescu, "Tyrosinase Folding and Copper Loading in vivo: A crucial Role for Calnexin and α -Glucosidase II", *Biochem. Biophys. Res. Commun.*, 261, 720 (1999).
42. Sallmann F., S.B. Descamps, F. Pattus, V. Salmon, N. Branza, G. Spik, D. Legrand, "Porins OmpC and PhoE of Escherichia coli as Specific Cell-surface Targets of Human Lactoferrin", *J. Biol. Chem.*, 274, 16107 (1999).
43. Negroiu G., N.Branza- Nichita, A.J. Petrescu, R.A. Dwek, S.M. Petrescu, "Protein specific N-glycosylation of tyrosinase and TRP-1 in B16 F1 mouse melanoma cells", *Biochemical J.*, 344, 659 (1999).
44. Negroiu G., N.Branza- Nichita, G.E. Costin, H. Titu, A.J. Petrescu, R.A.Dwek, S.M. Petrescu, "Investigation of the intracellular transport of tyrosinase and Tyrosinase Related Protein (TRP-1).The effect of the ER- glucosidases inhibition", *Cell. Mol. Biol.*, 45, 7 (1999).

45. Petrescu S, N. Branza-Nichita, M.N. Lazar, A.J. Petrescu, C. Motas, "Immunoaffinity Chromatography on Antibodies Immobilized on Nitrocellulose Powder", *Anal. Biochem.*, 229, 299 (1995).

c2. Nazionale (BDI)

1. C Lazăr, C Dorobanțu, A Macovei and B-Nichita N. „The absence of hepatitis B virus M protein expression results in impaired virion secretion without affecting its infectivity”. *Rom. J. Biochem.*47, 143-153 (2010).

2. Radulescu C, Nichita N. "Virus endocytosis: One goal, many routes". *Rom. J. Biochem.*, 46, 77-88 (2009).

3. Deliu A, C. Lazar and N. Branza- Nichita, "Expression and purification of bovine viral diarrhea virus Erns recombinant protein, antibodies production and characterization. *Rom.J. Biochem.*, 39,1-2, 13-19 (2002).

4. N. Branza- Nichita, M. Trif, G. Negroiu, S.M. Petrescu, "Transient Expression of Tyrosinase in Chinese Hamster Ovarian cells", *Rev. Roum. Biochim.*, 1-2, 36 (1999).

5. N. Branza-Nichita, A. Constantinescu, S. Petrescu, "Cloning and expression of mouse tyrosinase cDNA in E.Coli ", *Rev. Roum. Biochim.* 34, 1-4 (1997).

6. N. Branza-Nichita, Y. Lienart, S. Petrescu, "An enzyme linked immunoabsorbent assay for determination of Kd of lectin- carbohydrate interaction", *Rev. Roum. Biochim.*, 32, 3-4 (1995).

d) Publicatii in extenso aparute in lucrari ale conferintelor de specialitate indexate ISI

1. Pavlovic, D; Fischer, W; Hussey; Durantel; Durantel, S; Branza-Nichita, N; Woodhouse; Dwek, RA; Zitzmann, N. „Long alkylchain iminosugars block the HCV p7 ion channel”. *7th Jenner Glycobiology and Medicine Symposium, London (2004)*. Published in: *GLYCOBIOLOGY AND MEDICINE Book Series: ADVANCES IN EXPERIMENTAL MEDICINE AND BIOLOGY*, 564, 3-4 (2005).

2. Durantel, D; Branza-Nichita, N ; Durantel, S; Dweek, RA; Zitzmann, N. „The bovine viral diarrhoea virus: A model for the study of antiviral molecules interfering with N-glycosylation and folding of envelope glycoprotein” *7th Jenner Glycobiology and Medicine Symposium, London (2004)*. Published in: *GLYCOBIOLOGY AND MEDICINE Book Series: ADVANCES IN EXPERIMENTAL MEDICINE AND BIOLOGY*, 564, 5-6. (2005).

3. Sallmann, FR; Baveye-Descamps, S; Pattus, R; Salmon, V; Branza, N; Spik, G; Legrand, D. „Binding of human lactoferrin to Escherichia coli porins: a biochemical study”. *4th International Conference on Lactoferrin Structure, Function and Applications, SAPPORO (1999)*. Published in: *LACTOFERRIN: STRUCTURE, FUNCTION AND APPLICATIONS*, 1195, 77-84 (2000).

10. 01. 2019


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