

## PERSONAL INFORMATION

## Pătraș Laura-Ioana



📍 Prof. I. Olteanu Street, Floresti, Cluj county, 407280, Romania  
📞 0040756363402/1(347)891-6981  
✉ [laura.patras@ubbcluj.ro](mailto:laura.patras@ubbcluj.ro),  
📧 [patras.laura88@yahoo.com](mailto:patras.laura88@yahoo.com),  
[lip4003@med.cornell.edu](mailto:lip4003@med.cornell.edu)

Sex F | Date of birth 27/07/1988 | Nationality Romanian

## WORK EXPERIENCE

- 01/02/2021 – Present **Visiting Postdoctoral Fellow at Weill Cornell Medical College in the Department of Pediatrics (New York City, N.Y., U.S.)**  
Training and working in research on the roles of exosomes in Metastasis and Pre-Metastatic Niche Formation.  
[Research activity](#)
- 20/11/2020 – 30/04/2020 **Visiting Postdoctoral Fellow at Weill Cornell Medical College in the Department of Pediatrics (New York City, N.Y., U.S.)**  
Training and working in research on the roles of exosomes in Metastasis and Pre-Metastatic Niche Formation.  
[Research activity](#)
- 26/02/2018-Present **University assistant at Babeș-Bolyai University in the department of Molecular Biology and Biotechnology**  
Babeș-Bolyai University, 1, Kogalniceanu street, Cluj-Napoca, Romania ([www.ubbcluj.ro](http://www.ubbcluj.ro))  
Structural Biochemistry and Metabolism Biochemistry laboratory practices for undergraduates  
[Teaching activity](#)
- 01/08/2017-31/10/2019 **Research assistant in the national grant PN-III-P4-ID-PCE-2016-0342 entitled: "Means of intratumor intercellular communication – sources of inspiration for future cancer targeted therapies". Project director: Conf. Dr. Manuela Banciu.**  
Babeș-Bolyai University, 1, Kogalniceanu street, Cluj-Napoca, Romania ([www.ubbcluj.ro](http://www.ubbcluj.ro))  
Isolation, purification and stabilization of extracellular vesicles harvested from B16.F10 murine melanoma cells for their use as transport vehicles for different therapeutic agents *in vivo*.  
[Research activity](#)
- 01/10/2015-30/09/2017 **Research assistant in the national grant PN-II-RU-TE-2014-4-1191 entitled: "Re-education of protumor macrophages - ground for future targeted combination cancer therapies". Project director: Conf. Dr. Manuela Banciu.**  
Babeș-Bolyai University, 1, Kogalniceanu street, Cluj-Napoca, Romania ([www.ubbcluj.ro](http://www.ubbcluj.ro))  
Performing *in vitro* and *in vivo* experiments on the efficacy of combination therapies for advanced colorectal and melanoma cancer treatment and their potential to re-educate protumor macrophages.  
[Research activity](#)
- 04/01/2016–30/06/2016 **Erasmus+ mobility scholarship (6 months) at the University Medical Centre Utrecht**  
Utrecht Medical University Centre, Heidelberglaan 100, 3584 CX Utrecht, Netherlands (<http://www.umcutrecht.nl/nl/>)  
Studying extracellular vesicles secreted by colon cancer cells and investigating the manner in which these vesicles mediate cancer cell drug resistance to various therapeutic agents.  
[Research activity](#)
- 01/10/2013–04/10/2019 **PhD student in the doctoral school of Integrative Biology from Babeș-Bolyai University**  
Babeș-Bolyai University, 1, Kogalniceanu street, Cluj-Napoca, Romania ([www.ubbcluj.ro](http://www.ubbcluj.ro))  
The PhD thesis research was funded by the grant PN-II-PT-PCCA-2011-3.2-1060/2012: "Development and preclinical evaluation of nanoparticle systems for targeted colorectal cancer therapy". Project director: Prof. Dr. Laurian Vlase. As a member in this project, I performed *in vitro* and *in vivo* experiments to determine the efficacy of different targeted treatments and the

effects of these treatments on tumor inflammation, angiogenesis and oxidative stress status. During this PhD I received a doctoral scholarship POSDRU/159/1.5/S/133391 (08/04/2014 – 07/12/2015) and I was also a teaching associate responsible for biochemistry practical classes for undergraduate students and for coordinating bachelor and master thesis (2013-present).  
[Education and research activities](#)

01/05/2012–31/08/2013

**Biologist in the national project PN-RU-TE-69/291/2010: “Resistance and tolerance to parasitism as a mediator of avian life-history: the role of oxidative stress and immune cell system”.** Project director: Associate Prof. Dr. Peter Laszlo Pap.

Babeş-Bolyai University, 1, Kogalniceanu street, Cluj-Napoca, Romania ([www.ubbcluj.ro](http://www.ubbcluj.ro))  
 Analysis of the samples that consisted mainly of pro- and antioxidants quantification, immunological determinations, sex determination by nucleic acids analyses, microscopic examinations, as well as setting up protocols for oxidative stress measurement.

[Research activity](#)

#### EDUCATION AND TRAINING

10/2013–10/2019

#### PhD

EQF8

Babeş-Bolyai University, Faculty of Biology and Geology, Cluj-Napoca, Romania  
 Biochemistry and advanced molecular biology, oxidative stress, nanomedicine

10/2018-06/2018

#### Teacher training diploma - level II

Department for Teacher Training, Babeş-Bolyai University, 7, Sindicatelor street, Cluj-Napoca, Romania

10/2010–06/2012

#### Teacher training diploma - level I

Department for Teacher Training, Babeş-Bolyai University, 7, Sindicatelor street, Cluj-Napoca, Romania

10/2010–06/2012

#### Master's degree in Biology within the program of Molecular Biotechnology studies

EQF7

Babeş-Bolyai University, Faculty of Biology and Geology, Cluj-Napoca, Romania  
 Theoretical and practical skills of molecular biology and biotechnology, immunology, bioinformatics, recombinant DNA technology, cell signaling. I graduated on first place from a total of 21 graduates.

10/2007–06/2010

#### Bachelor's degree in Biology

EQF6

Babeş-Bolyai University, Faculty of Biology and Geology, Cluj-Napoca, Romania  
 Biology. I graduated on first place from a total of 31 graduates.

09/2003-06/2007

#### Baccalaureate

EQF5

National College "Emil Racoviță", Cluj-Napoca, Romania  
 Science major: maths and computer science, and English intensive program. English language certificate.

#### PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C1	C1	C1	C1
According to ALPHA English test and C2 according to CEFR					
French	C1	C2	C1	C1	B2
Self-evaluation					

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user  
[Common European Framework of Reference for Languages](#)

- Communication skills** Good communication and interaction skills in a multicultural environment, acquired through European and international exchange projects. Great ability to defend research papers in front of a public, obtained through my participation at national and international conferences.
- Organizational/managerial skills** Organizational/managerial skills acquired as a tutor for undergraduate laboratory practices (within the European project POSDRU/7/7.1/S/1, 20/06/2010-8/07/2010) as well as by organizing contests or volunteering in non-profit organizations to coordinate projects. Good leadership features and analytical thinking skills gained by coordinating students during their bachelor and master thesis studies and experiments. I appreciate both teamwork and individual work and I am very enthusiastic about my work.
- Job-related skills** Practical knowledge of molecular biology: DNA/RNA isolation, qPCR, PCR for sequencing, building clone libraries gained through my lab activity at the Institute for Biological Research from Cluj-Napoca during my bachelor and master thesis. Work experience with measurement of oxidative stress markers via different colorimetric and enzymatic methods, HPLC, immune system response to different factors (hemagglutination tests, enzymatic activity determination of lysozyme, microscopic examination of blood smears) gained via my research activity as a biologist in the project PN RU TE 69/291/2010 (Director: Associate Prof. Dr. Peter Laszlo Pap). Advanced knowledge of spectrophotometry, chromatography, electrophoresis, Western blot, protein array, ELISA, immunohistochemistry and immunofluorescence techniques. Experience with cell culture techniques and with different tumor models, as well as preparation and characterization of liposomes for therapeutic purposes, acquired during my doctoral research activity as a member in the following projects PN-II-PT-PCCA-2011-3.2-1060/2012 (Director: Prof. Dr. Laurian Vlase), PN-II-RU-TE-2014-41191, PN-III-P4-ID-PCE-2016-0342 (Director: Conf. Dr. Manuela Banciu).  
 Practical skills of fluorescence microscopy, flow cytometry, ultrafiltration methods, ultracentrifugation, size-exclusion chromatography and independent user of Nanoparticle Tracking Analysis and FACS instruments for the isolation and characterization of extracellular learned during the Erasmus mobility at the University Medical Centre Utrecht (Mentor: Prof. Dr. Raymond Schiffelers) and during my work in the national grant PN-III-P4-ID-PCE-2016-0342 (Director: Conf. Dr. Manuela Banciu).
- Digital competence**
- | Information processing | Communication    | Content creation  | Safety            | Problem solving  |
|------------------------|------------------|-------------------|-------------------|------------------|
| Proficient level       | Proficient level | Independent level | Independent level | Proficient level |
- Levels: Basic level - Independent level - Proficient level  
[Digital competence – self-evaluation](#)
- Advanced knowledge of Microsoft Office suite and basic knowledge of C++.Independent user of GraphPad Prism, TotalLabQuant, ImageJ, FACSCalibur, Zen, ChromNAV programs gained during my PhD and the Erasmus mobility at the UMCU. Basic level user of Photoshop, Adobe Illustrator.
- Other skills** Photography and speleology skills (Speo-Politehnica, 2006-Present). Member of the European Association for Cancer Research (EACR) (16/01/2015-Present), Member of the International Society for Extracellular Vesicles (ISEV) (12/03/19-Present) and Romanian Society of Biochemistry and Molecular Biology (SRBBM) (2015-Present).
- Driving licence** B

## ADDITIONAL INFORMATION

## Representative publications

1. **Patras L.**, Ionescu AE, Munteanu C, Hajdu R, Kosa A, Porfire A, Licarete E, Rauca VF, Sesarman A, Luput L, Bulzu P, Chiroi P, Tranca RA, Meszaros MS, Negrea G, Barbu-Tudoran L, Potara M, Szedlacsek S, Banciu M. Trojan horse treatment based on PEG-coated extracellular vesicles to deliver doxorubicin to melanoma *in vitro* and *in vivo*. *Cancer Biol Ther.* 2021 Dec 29;1-16. doi: 10.1080/15384047.2021.2003656. Epub ahead of print. PMID: 34964693.
2. **Patras L.**, Fens M.H.A.M, Vader P., Barendrecht A., Sesarman A, Banciu M., Schiffelers R. (2020) Normoxic tumour extracellular vesicles modulate the response of hypoxic cancer and stromal cells to doxorubicin *in vitro*. *Int. J. Mol. Sci.* 21(17):5951.
3. **Patras L.**, Banciu M. (2019) Intercellular crosstalk via extracellular vesicles in tumor milieu as emerging therapies for cancer progression. *Current Pharmaceutical Design* (manuscript accepted for publication in the special issue "Active Nanotargeting in Medicine")
4. **Patras L.**, Sylvester B., Luput L., Sesarman A., Licarete E., Porfire A., Muntean D., Drotar D.M., Rusu A.D., Nagy A.L., Catoi C., Tomuta I., Vlase L., Banciu M., Achim M. (2017) Liposomal prednisolone phosphate potentiates the antitumor activity of liposomal 5-fluorouracil in C26 murine colon carcinoma *in vivo*. *Cancer Biology & Therapy*, 18(8):616-626.
5. Rauca V.F., Licarete E., Luput L., Sesarman A., **Patras L.**, Bulzu P., Rakosy-Tican E., Banciu M. 2018. Combination therapy of simvastatin and 5, 6-dimethylxanthenone-4-acetic acid synergistically suppresses the aggressiveness of B16.F10 melanoma cells. *PLoS ONE* 13(8): e0202827.
6. Sesarman A., Tefas L., Sylvester B., Licarete E., Rauca V., Luput L., **Patras L.**, Porav S., Banciu M., Porfire A. 2018. Co-delivery of curcumin and doxorubicin in PEGylated liposomes favored the antineoplastic C26 murine colon carcinoma microenvironment. *Drug delivery and translational research*, 9(1):260-272. DOI: 10.1007/s13346-018-00598-8.
7. **Patras L.**, Sesarman A., Licarete E., Luca L., Alupei M.C., Rakosy-Tican E., Banciu M. (2016) Dual role of macrophages in the response of C26 colon carcinoma cells to 5-fluorouracil administration. *Oncology Letters*, 12(2):1183–1191.
8. Alupei M.C., Licarete E., **Patras L.**, Banciu M. (2015) Liposomal simvastatin inhibits tumor growth via targeting tumor-associated macrophages-mediated oxidative stress. *Cancer Letters*, 356:946-952.

## Conferences

Oral presentations:

**Laura Patras**, Aura Ionescu, Cristian V.A. Munteanu, Paul Bulzu, Paul Chiroi, Ștefan Szedlacsek, Manuela Banciu. Identification of extracellular vesicles surface proteins and their interactors as new targets for nanomedicine and immunotherapy in cancer. **The 12th International Conference and Workshop on Biological Biobarriers**, 27-29 August, 2018, Saarbrücken, Germany.

**Laura Patras**, Bianca Sylvester, Lavinia Luput, Alina Porfire, Alina Sesarman, Emilia Licarete, Dana Muntean, Denise Minerva Drotar, Alexandra Doina Rusu, Nagy-Andras Laszlo, Ioan Tomuta, Laurian Vlase, Marcela Achim, Manuela Banciu; Combination therapy of liposomal prednisolone and 5-fluorouracil exerts strong anti-inflammatory and anti-angiogenic effects on C26 colon carcinoma. **The Annual International Conference of the Romanian Society for Biochemistry and Molecular Biology**, 8-9 Iunie, Timișoara, România. Abstract book New frontiers in chemistry, S2\_OP8.

**Laura Patras**, Emilia Licarete, Lavinia Luca, Manuela Banciu, Tumor-associated macrophages are involved in the resistance of C26 colon carcinoma cells to the 5-fluorouracil treatment. **The Annual International Conference of the Romanian Society of Biochemistry and Molecular Biology and Workshop "Viral hepatitis from cell culture to clinic"**, 5-6 June, 2014, Băile Felix, Romania, Romanian Journal of Biochemistry, **51**, Suppl., p. 36.

Poster presentations:

**Laura Patras**, Emilia Licarete, Lavinia Luca, Alina Sesarman, Marius Alupei, Manuela Banciu, Tumor-associated macrophages-driven modulation of 5-fluorouracil effects on C26 colon carcinoma cells. **EACR-AACR-SIC Special Conference: Anticancer Drug Action and Drug Resistance (EAS2015)**, 20-23 June, 2015, Florence, Italy. EAS2015 Proceedings book, p.78, poster number 221.

Emilia Licarete, Marius Costel Alupei, **Laura Patras**, Manuela Banciu, The antitumor activity of simvastatin encapsulated in long circulating liposomes is dependent on the intratumoral macrophages. **23<sup>rd</sup> Biennial Congress of the European Association for Cancer Research (EACR-23)**, 5-8 July, 2014, Munich, Germany, European Journal of Cancer, **50**, 5:200-201.



Date: 07/02/2022