

## VALENTIN-FLORIAN RAUCA

---

Date of birth



## EDUCATION

---

- Jan-July.2019**      **PSYCHO-PEDAGOGIC TRAINING CERTIFICATE – LEVEL1**  
Babes-Bolyai University, Faculty of Psychology and Educational Sciences, DPPD, Cluj-Napoca, Romania
- Oct.2016 – Oct 2019**      **PhD PROGRAM IN INTEGRATIVE BIOLOGY**  
Babes-Bolyai University, Faculty of Biology and Geology, Cluj-Napoca, Romania  
**Doctoral thesis topic:**  
“Development of cancer therapies based on intercellular communication”
- Oct.2014 – July 2016**      **MASTER DEGREE IN MOLECULAR BIOTECHNOLOGY**  
Babes-Bolyai University, Faculty of Biology and Geology, Cluj-Napoca, Romania  
**Master thesis topic:**  
“Re-education of protumoral macrophages by the combined administration of simvastatin and DMXAA *in vitro*”
- March 2015 – July 2015**      **ERASMUS STUDENT MOBILITY FOR STUDIES (SMS) PROGRAM**  
Regensburg University, Faculty of Biology and Preclinical Medicine, Germany
- RNA Biology
  - Structure Determination of Membrane Proteins
  - Molecular Mechanisms of Development
- Oct. 2011 – July 2014**      **UNIVERSITY DEGREE IN BIOLOGY**  
Babes-Bolyai University, Faculty of Biology and Geology, Cluj-Napoca, Romania  
**Bachelor thesis topic:**  
“*In vitro* cytotoxicity of simvastatin on B16.F10 murine melanoma cells under hypoxic conditions”
- 2006 – 2009**      **UNIVERSITY DEGREE IN PSYCHOLOGY – DLP**  
Spiru Haret University, Faculty of Sociology and Psychology, Bucharest, Romania
- 2001 – 2006**      **STUDIES INTERRUPTED AFTER PRECLINICAL YEARS**  
University of Agricultural Sciences and Veterinary Medicine, Faculty of Veterinary Medicine, Cluj-Napoca, Romania
- 1997 – 2001**      **BACCALAUREATE – HIGH SCHOOL DEGREE**  
Liviu Rebreanu National High School, Bistrița, Romania

## PROFESSIONAL EXPERIENCE

---

- Nov 2019. – present** **KLINIK UND POLIKLINIK FÜR DERMATOLOGIE UND ALLERGOLOGIE (AM BIEDERSTEIN)**  
Technische Universität, Klinikum rechts der Isar,  
München, Germany  
**Position:** Scientist  
- Aberrant Immune Signals in Cancer,  
-The role of senescence-escape in early melanoma development  
-Blocking STK19 in NRAS mutant melanoma
- Oct.2017 – Oct. 2019** **DEPARTMENT OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY**  
Babes-Bolyai University, Faculty of Biology and Geology,  
Cluj-Napoca, Romania  
**Position:** Research assistant – Tumor intercellular communication tools – inspiration for future tumor-targeted therapies  
(ID: PN-III-P4-ID-PCE-2016-0342)
- March 2017 – Oct.2017** **DEPARTMENT OF PHARMACOGNOSY**  
Iuliu Hatieganu University of Medicine and Pharmacy, Faculty Of Pharmacy, Cluj Napoca, Romania  
**Position:** Research assistant - Phytochemical research and evaluation of the anti-inflammatory, antioxidant and antitumoral potential of some indigenous species of Ajuga" (ID: PN-II-RU-TE-2014-4-1247)
- Oct. 2015 – Oct. 2017** **DEPARTMENT OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY**  
Babes-Bolyai University, Faculty of Biology and Geology,  
Cluj-Napoca, Romania  
**Position:** Research assistant - Re-education of protumoral macrophages, premise for future combined targeted cancer therapies (Research Grant – Young Research Teams - PN-IIRU-TE-2014-4)
- August 2015 – Oct. 2015** **RESEARCH CENTRE FOR FUNCTIONAL GENOMICS, BIOMEDICINE AND TRANSLATIONAL MEDICINE**  
Iuliu Hatieganu University of Medicine and Pharmacy,  
Cluj-Napoca, Romania  
▪ Cell cultures  
▪ Processing biological samples  
**Position :** Laboratory internship
- June 2015 – Aug. 2015** **DEPARTMENT OF BIOPHYSICS AND BIOCHEMISTRY**  
Regensburg University, Faculty of Biology and Preclinical Medicine,  
Germany  
▪ Membrane protein expression and purification, protein quality control  
**Position:** Volunteer
- 2013 – 2015** **INSTITUTE FOR INTERDISCIPLINARY RESEARCH IN BIO-NANO SCIENCES**  
Babes-Bolyai University, Cluj-Napoca, Romania  
▪ Cell cultures  
▪ Protein quality control  
**Position:** Volunteer

## RELATED EXPERIENCE

---

2016 - present

I coordinated the research activity of secondary school student Andreea Cret – **Silver Medal In Life Science for Romania** at The 24<sup>th</sup> International Conference of Young Scientists in Stuttgart Germany 2017 – “The Antitumor Activity of the Simvastatin and DMXAA on the Co-Culture of B16.F10 Melanoma Cells and Macrophages”

I coordinated **6 bachelor theses**: “Targeting tumor angiogenesis via DMXAA-loaded long circulating liposomes” by student Naftan Daria; “The effect of DMXAA-loaded long circulating liposomes on murine melanoma inflammatory cytokines *in vivo*” by student Stef Anda; “Study of the antitumor efficacy of liposomes with DMXAA based therapy on B16.F10 murine melanoma *in vivo*” by student Pop Adriana-Ioana; “Effects of simvastatin and DMXAA on the angiogenic ability of B16.F10 murine melanoma cells co-cultured with macrophages” by student Coltau Catalin; “The *in vitro* effects of Simvastatin and DMXAA on the invasive capacity of B16.F10 murine melanoma cells” by student Hreanean Alin; “Assesment of the cytotoxic effect of liposome-based combined therapy with simvastatin and DMXAA, perspective for targeted cancer therapy” by student Bulgar Catalin.

2014-present

Member - Romanian Society of Biochemistry and Molecular Biology

## PUBLICATIONS

---

**Rauca V.F.**, Vlase L, Casian T, Sesarman A, Gheldiu AM, Mocan A, Banciu M, Toiu A. 2019. Biologically Active Ajuga Species Extracts Modulate Supportive Processes for Cancer Cell Development. *Frontiers in Pharmacology*;10:334. doi: 10.3389/fphar.2019.00334.

**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. <https://doi.org/10.1371/journal.pone.0202827>.

Emilia Licărete, **Valentin-Florian Rauca**, Lavinia Lupuț, Denise Minerva Drotar, Ioana Stejerean, Laura Pătraș, Bogdan Dume, Vlad Alexandru Toma, Alina Porfire, Gherman Claudia, Alina Sesărman, Manuela Banciu. 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*, 2020; doi: 10.3390/ijms21082968

Lavinia Lupuț, Alina Sesărman, Alina Porfire, Marcela Achim, Dana Muntean, Tibor Casian, Laura Pătraș, **Valentin Florian Rauca**, Denise Minerva Drotar, Ioana Stejerean, Ioan Tomuță, Laurian Vlase, Nicolae Dragoș, Vlad Alexandru Toma, Emilia Licărete, Manuela Banciu, Liposomal simvastatin sensitizes C26 murine colon carcinoma to the antitumor effects of liposomal 5-fluorouracil *in vivo*, 2020

Alina Sesărman, Dana Muntean, Bianca Abrudan, Lucia Tefas, Bianca Sylvester, Emilia Licărete, **Valentin Rauca**, Lavinia Lupuț, Laura Pătraș, Manuela Banciu, Laurian Vlase, Alina Porfire, Improved pharmacokinetics and reduced side effects of doxorubicin therapy by liposomal co-encapsulation with curcumin, *Journal of Liposome Research*, 2019; 12:1-10. doi: 10.1080/08982104.2019.1682604

Emilia Licărete, **Valentin Florian Rauca**, Lavinia Lupuț, Laura Pătraș, Alina Sesărman, Manuela Banciu, The prednisolone phosphate-induced suppression of the angiogenic function of tumor-associated macrophages enhances the antitumor effects of doxorubicin on B16.F10 murine melanoma cells *in vitro*, *Oncology Reports*, 2019; 42(6):2694-2705, doi: 10.3892/or.2019.7346

Sesarman A., Tefas L., Sylvester B., Licarete E., **Rauca VF.**, 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; doi: 10.1007/s13346-018-00598-8

Luput L, Licarete E, Drotar DM, Nagy AL, Sesarman A, Patras L, **Rauca VF**, Porfire A, Muntean D, Achim M, Tomuta I, Vlase L, Catoi C, Dragos N, Banciu M. In Vivo Double Targeting of C26 Colon Carcinoma Cells and Microenvironmental Protumor Processes Using Liposomal Simvastatin. *J Cancer*; 9(2):440-449, 2018.

Sesarman A, Tefas L, Sylvester B, Licarete E, **Rauca VF**, Luput L, Patras L, Banciu M, Porfire A. Anti-angiogenic and anti-inflammatory effects of long-circulating liposomes co-encapsulating curcumin and doxorubicin on C26 murine colon cancer cells. *Pharmacol Rep* 70(2): 331-339, 2017.

Licarete E, Sesarman A, **Rauca VF**, Luput L, Patras L, Banciu M. HIF-1 $\alpha$  acts as a molecular target for simvastatin cytotoxicity in B16.F10 melanoma cells cultured under chemically induced hypoxia. *Oncol Lett*. 13(5): 3942-3950, 2017.

## CONFERENCES AND WORKSHOPS

---

### Oral presentation

Valentin-Florian Rauca, Laura Pătraș, Lavinia Lupuț, Alina Sesărman, Emilia Licărete, Vlad Toma, Augustin C. Moț, Manuela Banciu. **Combination therapy of the liposome-encapsulated agents Simvastatin and DMXXA affects major mechanisms of murine melanoma development and progression.** The 24<sup>th</sup> World Congress on Advances in Oncology and 24<sup>th</sup> International Symposium on Molecular Medicine, 10-12<sup>th</sup> of October, 2019, Mystras, Sparta, Greece. Book of abstracts: *Journal of Molecular Medicine*, volume 44, supplement 1, 219, 2019 (Oral Presentation)

### Oral presentation

Valentin-Florian Rauca, Laura Pătraș, Lavinia Lupuț, Alina Sesărman, Emilia Licărete, Vlad Toma, Augustin C. Moț, Manuela Banciu. **Shifting the balance towards an anti-tumorigenic melanoma microenvironment via co-administration of liposome-encapsulated simvastatin and DMXAA *in vivo*.** Annual International Conference of the RSBMB, 26-27<sup>th</sup> of September 2019, Iași, România. Book of abstracts: *Journal of Experimental and Molecular Biology*, Tome XX, No 3, pag 41 (Oral Presentation).

### Oral presentation

Valentin-Florian Rauca, Emilia Licarete, Alina Sesarman, Lavinia Luput, Laura Patras, Manuela Banciu – **Enhanced antitumor efficacy induced by the coadministration of Simvastatin and DMXAA on an *in vitro* melanoma inflammation model** at The Annual International Conference of the Romanian Society of Biochemistry and Molecular Biology, 8<sup>th</sup>-9<sup>th</sup> June 2017, Timisoara, Romania.  
Abstract published in *NEW FRONT. CHEM*, Volume 26, Nr.2  
ISSN 2393-2171; ISSN-L 2393-2171

### Poster presentation

Valentin-Florian Rauca, Tibor Casian, Alina Sesarman, Laurian Vlase, Ana-Maria Gheldiu, Manuela Banciu, Anca Toiu - **Antitumor evaluation of extracts from selected indigenous ajuga species on murine colon carcinoma and melanoma cell lines** at The Annual International Conference of the Romanian Society of Biochemistry and Molecular Biology. Bucharest 5-7th September, 2018.

Valentin-Florian Rauca, Emilia Licarete, Manuela Banciu- ***In vitro* citotoxicity of simvastatin on B16.F10 murine melanoma cells under hypoxic conditions** at The Annual International Conference of the Romanian Society of Biochemistry and Molecular Biology & Workshop - Viral

Hepatitis – from cell culture to clinic. 5<sup>th</sup>-6<sup>th</sup> of June 2014, Baile-Felix, Romania

Abstract published in ROM. J. BIOCHEM., Suppl., P.1-104(2014), pp. 87.

**Moderator** International Conference **Molecular Biology – Current Aspects and Prospects**, 6<sup>th</sup>-8<sup>th</sup> of November 2015, Cluj-Napoca, Romania  
Keynote speaker: Sir Richard Timothy Hunt, Nobel Prize Winner.

**Workshops** Practical workshop: “**Real time PCR in clinical practice**”, 7<sup>th</sup>-8<sup>th</sup> of June 2017, Timisoara, Romania

**International Workshop on Genomics** at the Research Centre for Functional Genomics Biomedicine and Translational Medicine, 7th October 2016

**Bioethical approaches & Responsible conduct in Translational Research**, 24<sup>th</sup>-25<sup>th</sup> of September 2015, Cluj-Napoca, Romania

**Certificates** **Laboratory Animal Science Course Certificate** – EU function A with Focus on Mice and Rats, former FELASA Category B. The course content corresponds to the recommendations of the **Federation of European Laboratory Animal Science Association (FELASA)** for the training and education of persons participating in the performance of animal experiments. Centre for Preclinical Research at the Klinikum rechts der Isar of the Technical University (TUM) of Munich.

## LANGUAGES

---

English	fluent (C1 level- Certified by Alpha Center- CECRL- 2014)
German	intermediate (B1 level- Intensivsprachkurs für Programmstudierende-Zentrum für Sprache und Kommunikation – Universität Regensburg)
Romanian	mother tongue

## REFERENCES

---

Manuela Banciu	Associate Professor, Department of Molecular Biology and Biotechnology Faculty of Biology and Geology, Babes-Bolyai University, Cluj-Napoca, Romania: <a href="mailto:manuela.banciu@ubbcluj.ro">manuela.banciu@ubbcluj.ro</a>
Christian Posch	PhD. Priv.Doz. Dr. Med. Univ. Head of Dermato-Oncology Technical University of Munich, Department of Dermatology and Allergy Germany: <a href="mailto:christian.posch@tum.de">christian.posch@tum.de</a>