DR. VALENTIN-FLORIAN RAUCA

Klinik und Poliklinik für Dermatologie und Allergologie
der Technische Universität München
Biedersteiner Str. 29
80802 München
valentin.rauca@tum.de

Date of birth: 13th of February 1982

EDUCATION

Oct.2016 – July 2020 **PhD DEGREE IN INTEGRATIVE BIOLOGY**
Babes-Bolyai University, Faculty of Biology and Geology, Cluj-Napoca, Romania
Doctoral thesis topic:
"Exploiting the therapeutic potential of oxidative stress modulators in melanoma"

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* citotoxicity of simvastatin on B16.F10 murine melanoma cells under hypoxic conditions"

PROFESSIONAL EXPERIENCE

Nov 2019. – present **KLINIK UND POLIKLINIK FÜR DERMATOLOGIE UND ALLERGOLOGIE (AM BIEDERSTEIN)**
Technische Universität, Klinikum rechts der Isar, München, Germany
Position: Postdoctoral researcher – P17: Impact of aberrant immune signaling in melanoma mast cell networks on melanoma progression and metastasis – DFG Collaborative Researche Centres Programme (project leader Dr. Tilo Biedermann)

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) (project leader Dr. Manuela Banciu)

March – 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)
(project leader Dr. Anca Toiu)

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)
(project leader Dr. Manuela Banciu

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

2019-present Member of Posch-Lab – (www.posch-lab.com) - team focused on skin cancer biology and inflammatory skin diseases

Current projects:
Aberrant Immune Signals in TME
The role of senescence-escape in early melanoma development
Blocking STK19 in NRAS mutant melanoma

2014-present Member - Romanian Society of Biochemistry and Molecular Biology

CONFERENCES AND CERTIFICATES

Oral presentation Valentin-Florian Rauca, Caterina Iuliano, Susanne Kaesler, Christian Posch, Tilo Biedermann. **Impact of aberrant immune signaling in melanoma mast cell networks on melanoma progression and metastasis.** CRC 1335 Retreat 12-13 October, 2020 Munich, Germany (Online)

Oral presentation Valentin-Florian Rauca, Laura Pătraș, Lavinia Luput, 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 24th World Congress on Advances in Oncology and 24th International Symposium on Molecular Medicine, 10-12th of October, 2019, Mystras, Sparta, Greece. Book of abstracts: Journal of Molecular Medicine, volume 44, supplement 1, 219, 2019

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, 8th-9th June 2017 Timisoara, Romania.
Abstract published in NEW FRONT. CHEM, Volume 26, Nr.2
ISSN 2393-2171; ISSN-L 2393-2171

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 Regensbug)
Romanian	mother tongue

REFERENCES

Christian Posch
PhD. Priv.Doz. Dr. Med. Univ. Head of Dermato-Oncology
Technical University of Munich, Department of Dermatology and Allergy
Germany: christian.posch@tum.de

Manuela Banciu
Associate Professor, Department of Molecular Biology and Biotechnology
Faculty of Biology and Geology, Babes-Bolyai University, Cluj-Napoca,
Romania: manuela.banciu@ubbcluj.ro

RELEVANT PUBLICATIONS

CORRESPONDING AUTHOR PUBLICATIONS

Giorgiana Negrea, **Valentin-Florian Rauca***, Marta Szilvia Meszaros, Laura Patras, Lavinia Luput, Emilia Licarete, Vlad-Alexandru Toma, Alina Porfire, Dana Muntean, Alina Sesarman, Manuela Banciu. Active Tumor-Targeting Nano-formulations Containing Simvastatin and Doxorubicin Inhibit Melanoma Growth and Angiogenesis. *Front. Pharmacol*., 05 April 2022 | https://doi.org/10.3389/fphar.2022.870347

FIRST AUTHOR PUBLICATIONS

Valentin-Florian Rauca, Laura Patras, Lavinia Luput, Emilia Licarete, Vlad-Alexandru Toma, Alina Porfire, Augustin Catalin Mot, Elena Rakosy-Tican, Alina Sesarman Manuela Banciu. Remodeling tumor microenvironment by liposomal codelivery of DMXAA and simvastatin inhibits malignant melanoma progression. *Sci Rep*. 2021 Nov 11;11(1):22102. doi: 10.1038/s41598-021-01284-5.

Valentin-Florian Rauca, Laurian Vlase, Tibor Casian, Alina Sesarman, Ana-Maria Gheldiu, Andrei Mocan, Manuela Banciu, Anca Toiu. Biologically active *Ajuga* species extracts modulate supportive processes for cancer cell development. *Frontiers in Pharmacology* 2019; 10:334. doi: 10.3389/fphar.2019.00334.

Valentin-Florian Rauca, Emilia Licarete, Lavinia Luput, Alina Sesarman, Laura Ioana Patras, Paul Bulzu, Elena Rakosy-Tican, Manuela Banciu. Combination therapy of simvastatin and 5, 6-dimethylxanthenone-4-acetic acid synergistically suppresses the aggressiveness of B16.F10 melanoma cells. *PLoS ONE* 2018 13(8):e0202827. https://doi.org/10.1371/journal.pone.0202827.

CO-AUTHOR PUBLICATIONS

Cristina Ioana Barbălată, Alina Silvia Porfire*, Alina Sesarman, **Valentin-Florian Rauca**, Manuela Banciu, Dana Muntean, Rareș Știufiuc, Alin Moldovan, Cristian Moldovan, Ioan Tomuță. A Screening Study for the Development of Simvastatin-Doxorubicin Liposomes, a Co-Formulation with Future Perspectives in Colon Cancer Therapy. Pharmaceutics. 2021 Oct; 13(10): 1526. Published online 2021 Sep 22. doi: 10.3390/pharmaceutics13101526

Laura Patras, Aura Elena Ionescu, Cristian Munteanu, Renata Hajdu, Andreea Kosa, Alina Porfire, Emilia Licarete, **Valentin Florian Rauca**, Alina Sesarman, Lavinia Luput, Paul Bulzu, Paul Chiroi, Rares Andrei Tranca, Marta-Szilvia Meszaros, Giorgiana Negrea, Lucian Barbu-Tudoran, Monica Potara, Stefan Szedlacsek, Manuela Banciu. Trojan horse treatment based on PEG-coated extracellular vesicles to deliver doxorubicin to melanoma in vitro and in vivo. *Cancer Biol Ther*. 2022 Dec 31;23(1):1-16. doi: 10.1080/15384047.2021.2003656. Epub 2021 Dec 29

Emilia Licărete, **Valentin-Florian Rauca**, Lavinia Luput, 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 Luput, 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*. Cancer Science, 2020; doi: 10.1111/cas.14312

Alina Sesărman, Dana Muntean, Bianca Abrudan, Lucia Tefas, Bianca Sylvester, Emilia Licărete, **Valentin-Florian Rauca**, Lavinia Luput, 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

Alina Sesarman, Lucia Tefas, Bianca Sylvester, Emilia Licarete, **Valentin-Florian Rauca**, Lavinia Luput, Laura Patras, Sebastian Porav, Manuela Banciu, Alina Porfire. Co-delivery of curcumin and doxorubicin in PEGylated liposomes favored the antineoplastic C26 murine colon carcinoma microenvironment. *Drug delivery and translational research*; 2018 doi: 10.1007/s13346-018-00598-8

Lavinia Luput, Emilia Licarete, Denise Minerva Drotar, Andras-Laszlo Nagy, Alina Sesarman, Laura Patras, **Valentin-Florian Rauca**, Alina Porfire, Dana Muntean, Marcela Achim, Ioan Tomuta, Laurian Vlase, Cornel Catoi, Nicolae Dragos, Manuela Banciu. *In Vivo* Double Targeting of C26 Colon Carcinoma Cells and Microenvironmental Protumor Processes Using Liposomal Simvastatin.*J Cancer* 2018; 9(2):440-449

Alina Sesarman, Lucia Tefas, Bianca Sylvester, Emilia Licarete, **Valentin-Florian Rauca**, Lavinia Luput, Laura Patras, Manuela Banciu, Alina Porfire. Anti-angiogenic and anti-inflammatory effects of long-circulating liposomes co-encapsulating curcumin and doxorubicin on C26 murine colon cancer cells. *Pharmacol Rep* 2017; 70(2): 331-339

Emilia Licarete, Alina Sesarman, **Valentin-Florian Rauca**, Lavinia Luput, Laura Patras, Manuela Banciu. HIF-1α acts as a molecular target for simvastatin cytotoxicity in B16.F10 melanoma cells cultured under chemically induced hypoxia. *Oncol Lett* 2017 13(5): 3942-3950