Michael J. Ausserlechner

Born, 13.12.1971, Lienz, Tyrol, Austria; Austria Citizenship

Brief description of interest

My main interest is basic and translational cancer research for the treatment of childhood malignancies and the development of advanced *in vitro* models by 3D bioprinting and tissue engineering. In particular we identify small compounds that target transcription factors of the FOXO family and cellular oncogenes such as BIRC4/ XIAP and study their effect in complex 3D models including custom designed 3D printed bioreactors. We are the first in Austria to 3D bioprint complex living tissues and develop 3D-bioprinted organ_on_a_chip models. For drug-discovery we use medium throughput screening of medicinal drug libraries by fluorescence polarization in combination with cell-based protein-fragment complementation analysis.

CURRICULUM VITAE

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Place of Birth:	Lienz, Tyrol;
Date of Birth:	13.12.1971
Nationality:	Austria Citizenship
Acad. Degree:	Assoc.Prof.PD.Mag.Dr.rer.nat.

Education

2000	Graduation to Doctor of natural sciences (Dr. rer. nat)
1997 - 2000	PhD thesis at the Department of Molecular Pathophysiology at the Leopold Franzens University Innsbruck
1996	Graduation to Master of Science (Mag. rer. nat.) at the Leopold Franzens University Innsbruck
1990	Matura at the BG/BRG Lienz, Tyrol

Career History

2014-present	**Associate Professor** at the Department of Pediatrics I, MUI
2012	**Assistant Professor** at the Department of Pediatrics I, MUI
2012	**Research stay** at Charles University, Prague
2006	***Venia Docendi*** (Priv.-Doz.) in Pathophysiology at the MUI
2003	**Research stay** at the Albert Einstein College of Medicine, New York
2003-present	**Group leader/Senior Scientist** of the Molecular Research Laboratory, Department of Pediatrics, Medical University Innsbruck
2001 - 2003	**Lab Head** at the Laboratory of Molecular Pathophysiology, Department of Molecular Pathophysiology, Leopold Franzens University Innsbruck.
2000 - 2001	**Postdoctoral position** at the Department of Molecular Pathophysiology; Leopold Franzens University Innsbruck

Awards

2018	"Best Pitch Talk Award" at WTZ west life science meeting
2017	"ÖGKJ-Prize 2017" (best publication in oncology)
2016	"CAST Award 2016" (concept of a mini-3D bioprinter)
2007	„Otto Kraup Prize 2007" (best habilitations at Austrian Medical Universities)
2005	„Prize of the Principality of Liechtenstein 2005"
2000	"Thesis award of the Tyrolean Cancer Society 2000"
2000	"Thesis award of the Austrian Society of Allergy and Immunology 2000"
1999	"Best-talk at ÖBG&ÖGGGT Meeting 1999"

Selected Research Grants

2018-2021	International Austrian Science Fund Project "INFODI"; 340K €
2018-2020	MFF Research Project (Project Nr. 291); 15K €
2014-2016	PRIZE-Project Grant (AWS) 98K €
2014-2016	Provita Leukemia Foundation, 25K €
2013-2016	MFF Research Project (Project Nr. 254) 15 K €
2010-2012	COMET Center of Excellence "ONCOTYROL" Project 1.6. 100K €
2009-2012	COMET Center of Excellence "ONCOTYROL" Project 1.4. 640K €
2007-2011	MFF Research Project (Project Nr. 161); 20K €
2007-2010	MFI-Research Project (Project Nr. 9400); 112K €
2005-2011	Provita Leukemia Foundation 54K €
2005-2008	Research Project Grant of the OeNB Anniversary Fund (11436) 100K €

Teaching activities

Coordinator of Clinical Cancer Research (CCR) Program at MUI, Faculty Member of PhD Program Genetics, Epigenetics and Genomics (GEG), Faculty Member of Molecular Cell Biology and Oncology (MCBO)

Teaching at MUI, Management Center Innsbruck and Leopold Franzens University Innsbruck at all levels of education (BSc, MSc and PhD) on the topics molecular biology, gene technology, tissue engineering, 3D bioprinting, rapid prototyping (3D printing & C++ programming). Developed and coordinates elective module "3D Bioprinting, stem cells and rapid prototyping" for master studies in Molecular Medicine, MUI together with J. Hagenbuchner.

Supervised PhD students: 6 (LFU & MUI)

Supervised MSc students: 16 (MUI, LFU, MCI, FH-Wels, FH-Campus Wien)

Supervised BSc students: 9 (FHg, MUI)

Other functions

Reviewer for SNF, OeNB, various journals (e.g. Cell Death Differentiation, Journal of Cell Science, JBC, PlosOne, Blood, Oncotarget, Molecular Cancer Research, British J. of Cancer, Biochem. Pharmacology, FEBS J., FEBS Letters, Scientific Reports,..), Reviewer of the 4-year evaluation of Czech Academy of Sciences 2015, Member of the animial ethics board (Medical University Innsbruck).

Important achievements

Austria's first Laboratory of 3D Bioprinting (founded together with J. Hagenbuchner).

International project INFODI to identify FOXO-inhibitory compounds

Project leader Oncotyrol Center of Excellence Project

Publications (link to all publications via https://orcid.org/0000-0002-1015-2302)

author/co-author of 50 papers with IF and 2 book chapters (> 4000 citations, h-index 27).

Most important scientific publications

1. Hagenbuchner J., Oberacher H., Arnhart K., Kiechl-Kohlendorfer U., Ausserlechner M.J. (2019) Modulation of Respiration and Mitochondrial Dynamics by SMAC-Mimetics for Combination Therapy in Chemoresistant Cancer. Theranostics. 2019 Jul 9;9(17):4909-4922. doi: 10.7150/thno.33758.

2. Rupp M., Hagenbuchner J., Rass B., Fiegl H., Kiechl-Kohlendorfer U., Obexer P., Ausserlechner M.J. (2017) FOXO3-mediated chemo-protection in high-stage neuroblastoma depends on wild-type TP53 and SESN3. Oncogene. 36(44): 6190-6203. doi: 10.1038/onc.2017.288.

3. Hagenbuchner J., Kiechl-Kohlendorfer U., Obexer P., Ausserlechner M.J. (2016) BIRC5/Survivin as target for glycolysis inhibition in high-stage neuroblastoma. Oncogene, 35(16):2052-61. doi: 10.1038/onc.2015.264.

4. Hagenbuchner J, Kuznetsov AV, Obexer P, and Ausserlechner MJ (2013). BIRC5/Survivin enhances aerobic glycolysis and drug resistance by altered regulation of the mitochondrial fusion/fission machinery, Oncogene, 32(40):4748-57. doi: 10.1242/jcs.092098.

5. Hagenbuchner, J., Kuznetsov, A. V., Hermann, M., Hausott, B., Obexer, P., Ausserlechner, M. J.# (2012) FOXO3-induced reactive oxygen species are regulated by BCL2L11/Bim and SESN3. Journal of Cell Science. 125(PT5): 1191-203. doi: 10.1242/jcs.092098.

6. Obexer, P., Geiger, K., Ambros, P., Meister, B., Ausserlechner, M.J. (2007) FKHRL1-mediated expression of Noxa and Bim induces apoptosis via the mitochondria in neuroblastoma cells. Cell Death and Differentiation, 14(3), 534-547. doi: 10.1038/sj.cdd.4402017

7. Villunger, A., Michalak, E., Coultas, L., Müllauer, F., Böck, G., Ausserlechner, M.J., Adams, J.M., Strasser, A. (2003): BH3-only Proteins Puma/Bbc3 and Noxa Are Limiting for Cytotoxic Drug-Induced Apoptosis. Science, 302, 1036-1038. doi: 10.1126/science.1090072