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# BIOCENTER

# Newsletter



#01/19



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## Editorial

### Dear members of the Biocenter!

First of all, a happy, healthy and successful year to all of you! I hope you found a way to escape all the Christmas craziness and managed to uncouple from all the downsides of this time a year to enjoy time with family and friends. After all, for most of us, it is a time to step back and reflect, possibly also think about the notoriously shaky New Year resolutions. Along that way, mine was to finally deliver another BCNL to you! At least I can say, I managed to meet this promise I made myself ☺.

The last year was not the easiest for many of us, and, as usual, there is hope things will improve in 2019. This year, I will manage to publish all those papers (that should have been published last year), or, get funding for the best grant I ever wrote (just the reviewers didn't get it last year.....). So, there is this intrinsic hope in us, just because we now write 2019 in our calendar, instead of 2018. I think this is terribly sweet (others may call it naïve....). In any case, unwiring the underlying biological and molecular basis of this irrational human behaviour would certainly be worth a paper in CELL. Maybe single cell sequencing on December 31<sup>st</sup> vs. January 1<sup>st</sup> could do the trick.

What certainly will change in 2019 is that from running in circle for years, trying to get an infusion of fresh blood into the Biocenter, we may finally succeed, with the opening of a new professorship for Pathophysiology to be announced in the next weeks. After this, the sky is the limit ☺. Who knows, maybe we will also manage to recruit new tenure track positions here at the Biocenter that should also be announced in 2019. Certainly, with some good will from all of us, we could create a welcoming environment that can be highly attractive to newcomers. Yes, we can! If we want to..... Let's keep the spirit high and see what we can make out of it. After all, the atmosphere of the place we work in is only a reflection of the people who work in it. So, let's make it a great one.

Now, I rather stop with my second class philosophy and let you go on with your work. In case you are curious to know what happened since our last newsletter, feel free to read on.

Have a great day!

On behalf of all involved,

**Andreas**

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# Biocenter Research News

## Division of Bioinformatics



picture by MUI

### **Fünf neue FWF-Projekte an der MUI**

Ausgewiesenes Ziel des Forschungsförderungsfonds ist es, die wissenschaftliche Leistungsfähigkeit Österreichs im internationalen Vergleich sowie seine Attraktivität als Wissenschaftsstandort vor allem durch Förderung von Spitzenforschung einzelner Personen bzw. Teams, aber auch durch Beiträge zur Verbesserung der Konkurrenzfähigkeit der Forschungsstätten und des Wissenschaftssystems in Österreich zu stärken. In einem FWF-geförderten internationalen DACH-Projekt findet sich das Teilprojekt von ZLATKO TRAJANOSKI. „IBDome“

### **Five new FWF projects at MUI**

The stated aim of the Research Promotion Fund is to strengthen Austria's scientific performance in international comparison and its attractiveness as a location for science, above all by promoting top-level research of individuals or teams, but also by contributing to improve the competitiveness of research facilities and strengthen the science system in Austria. In an FWF-funded international DACH project, the subproject of ZLATKO TRAJANOSKI, can be found. "IBDome"

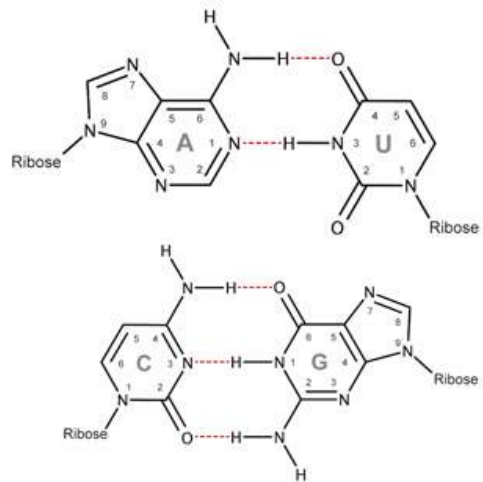
Read more:

<https://www.i-med.ac.at/mypoint/news/722589.html>

## Division of Genomics & RNomics



picture by MUI



### **Neue Erkenntnisse zu grundlegendem Zellmechanismus**

Die Untersuchungen unter der Federführung von MATTHIAS ERLACHER und THOMAS HOERNES von der Sektion für Genomik und RNomik geben neue Einblicke in die Proteinsynthese und sind erst kürzlich im renommierten Forschungsjournal „Nature Communications“ veröffentlicht worden.

Matthias Erlacher und seinen KollegInnen versuchen mit neuen Ansätzen und Techniken, diesen Prozess genauer zu beleuchten. In ihrer Forschungsarbeit untersuchten Erstautor Thomas Hoernes und Letztautor Matthias Erlacher diesen Dekodierungsprozess auf atomarer Ebene. Für die Studie haben die Innsbrucker Forscher unter anderem die Stabilität des Inosin-Cytosin-Basenpaares angeschaut. Die neuerliche Publikation in dem anerkannten Fachjournal Nature Communication bestätigt die hohe Expertise der Life Science in Innsbruck.

### **New findings on basic cell mechanisms**

The investigations under the leadership of MATTHIAS ERLACHER and THOMAS HOERNES of the Division of Genomics and RNomics give new insights into protein synthesis and have recently been published in the prestigious research journal Nature Communications.

Matthias Erlacher and his colleagues try to shed light on this process with new approaches and techniques. In their research, first author Thomas Hoernes and last author Matthias Erlacher examined this decoding process at the atomic level. Among other things, the Innsbruck researchers looked at the stability of the inosine-cytosine base pair for the study. The recent publication in the known journal Nature Communication confirms the high expertise of Life Science in Innsbruck.

Read more:

<https://www.i-med.ac.at/mypoint/news/723625.html>

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## Division of Dev. Immunology



picture by MUI

### **Sanofi Preis für drei junge ForscherInnen der MUI**

Ziel des seit über 50 Jahren bestehenden Sanofi Forschungspreises ist es, junge exzellente Forscherinnen und Forscher aus den Life Sciences zu identifizieren und ihre wegweisenden Arbeiten, die zum Teil bereits in wichtigen Fachjournals publiziert worden sind, zu honorieren.

Der Preisträger FABIAN SCHULER, aus der Arbeitsgruppe Villunger, berichtet in seiner Arbeit von der Schlüsselrolle der Kinase CHK1 in der B-Zell-Entwicklung und in der Entstehung sowie beim Überleben von B-Zell-Lymphomen - „Checkpoint kinase 1 is essential for normal B cell development and lymphomagenesis“.

### **Sanofi price for three young scientists from the MUI**

The goal of the Sanofi Research Prize, which has been in existence for more than 50 years, is to identify outstanding young life science researchers and reward their groundbreaking work, some of which have already been published in important specialist journals.

The prizewinner FABIAN SCHULER, from the research group Villunger, reports in his work of the key role of the kinase CHK1 in B cell development and in the formation and survival of B cell lymphomas - "Checkpoint kinase 1 is essential for normal B cell development and lymphomagenesis".

Read more:

<https://www.i-med.ac.at/mypoint/news/722907.html>

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## Division of Cell Biology



picture by MUI

### **Preis der Stadt Innsbruck für zwei BiologInnen der MUI**

Im Rahmen eines feierlichen Festaktes wurde am 29. November 2018 der Preis der Landeshauptstadt Innsbruck für wissenschaftliche Forschung 2018 an der Medizinischen Universität Innsbruck vergeben. MARIANA ARAUJO aus der Arbeitsgruppe Huber und Andreas Naschberger freuten sich über die Auszeichnung ihrer gemeinsamen, im renommierten Fachjournal Science veröffentlichten, Forschungsarbeit. Gemeinsam mit weiteren KollegInnen am Innsbrucker Biozentrums ist es den beiden BiologInnen gelungen, die dreidimensionale Struktur des LAMTOR Komplexes und seiner Bedeutung für die Signalübertragung aufzuklären.

### **Price of the city Innsbruck for two biologists at the MUI**

As part of a festive ceremony, the Prize of the City of Innsbruck for Scientific Research 2018 at the MUI was awarded on 29 November. MARIANA ARAUJO from the working group Huber and Andreas Naschberger were pleased to receive the award for their joint research work published in the renowned journal Science. Together with other colleagues at the Biocenter, the two biologists succeeded in enlighten the three-dimensional structure of the LAMTOR complex and its significance for signal transmission.

Read more:

<https://www.i-med.ac.at/mypoint/news/723476.html>

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## Division of Molecular Biology



picture by MUI

### **Daniel Swarovski Fonds: Neue Strategien bei Pilzinfektionen**

Der Daniel Swarovski-Förderungs fonds ermöglicht es der Medizinischen Universität Innsbruck, hervorragende Forschungsarbeiten von NachwuchswissenschaftlerInnen auszuzeichnen. Diesmal ging die begehrte Förderzusage an den Molekularbiologen FABIO GSALLER. Im Fokus der Forschungsarbeit von Fabio Gsaller steht der Schimmelpilz *Aspergillus fumigatus*. Mit modernen Methoden analysieren er und sein Team zusammen mit seinen KollegInnen in der Forschungsgruppe von Hubertus Haas am Biozentrum die molekularen Resistenzmechanismen im Stoffwechsel dieses Pilzes. Mit den Mitteln aus dem Daniel-Swarovski Förderungs fonds untersucht Gsaller nun mögliche, auf Nukleinsäure basierende Alternativen zur Hemmung der Ergosterolsynthese.

### **Daniel Swarovski Fonds: New strategies for fungal infections**

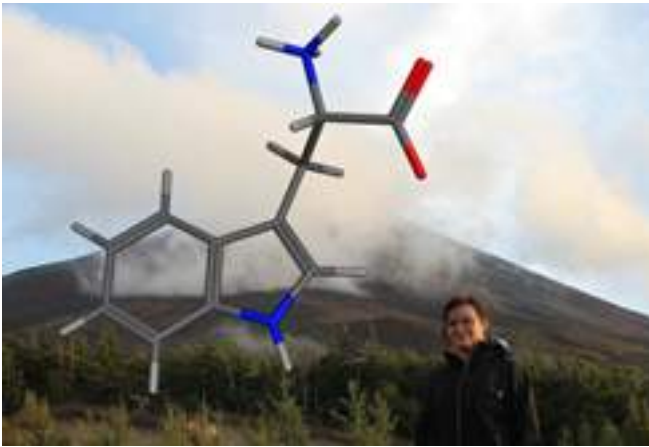
The Daniel Swarovski Promotion Fund enables the MUI to award outstanding research work to young scientists. This time, the sponsorship went to the molecular biologist FABIO GSALLER. The research of Fabio Gsaller focuses on the fungus *Aspergillus fumigatus*. Using modern methods, he and his team, together with his colleagues in the Haas group at the Biocenter, analyze the molecular mechanisms of resistance in the metabolism of this fungus. Using resources from the Daniel-Swarovski Fund, Gsaller is now exploring possible nucleic acid-based alternatives to inhibit ergosterol synthesis.

Read more:

<https://www.i-med.ac.at/mypoint/news/721865.html>

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## Division of Medical Biochemistry



picture by MUI

### **Auszeichnung für Tryptophanforschung**

Im Rahmen der diesjährigen Konferenz der International Society for Tryptophan Research (ISTRY) in Hikone, Japan erhielt JOHANNA GOSTNER einen der begehrten Young Scientist Awards – eine Anerkennung für ihre Arbeiten der letzten Jahre über die Wechselwirkung von körpereigenen, sowie Umwelt- und Lifestyle-Faktoren mit dem immuninduzierten Tryptophanabbau.

### **Award for Tryptophan research**

At this year's International Society for Tryptophan Research (ISTRY) conference in Hikone, Japan, JOHANNA GOSTNER received one of the Young Scientist Awards - a tribute to her work over the past few years on the interaction of the body's own and environmental and lifestyle factors the immunoinduced tryptophan degradation.

Read more:

<https://www.i-med.ac.at/mypoint/news/723050.html>



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## Division of Clinical Biochemistry



picture by MUI

Mit 1. Oktober 2018 wurde HERBERT LINDNER als Professor für Proteinbiochemie an der Sektion für Klinische Biochemie der MUI berufen.

On October 1, 2018, HERBERT LINDNER was appointed as Professor of Protein Biochemistry at the Department of Clinical Biochemistry of MUI.

Read more:

<https://www.i-med.ac.at/mypoint/news/722454.html>

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## Science & Society

- **Personalisierte Krebsmedizin PreCanMed fördert Forschungsnachwuchs**



picture by MUI

Im Rahmen des grenzübergreifenden Interreg Projekts PreCanMed fand in Innsbruck Juli eine Summer School für junge WissenschaftlerInnen aus der Krebsforschung statt. Gemeinsam trafen sich ForscherInnen aus Innsbruck, Triest und Udine zum Erfahrungsaustausch über eine der fortschrittlichsten Technologien auf dem Gebiet der Krebsforschung: Die Züchtung von Tumor-Organoiden im Labor.

As part of the cross-border Interreg project PreCanMed, a summer school for young scientists from cancer research took place in Innsbruck in July. Researchers from Innsbruck, Trieste and Udine met to exchange experiences on one of the most advanced technologies in the field of cancer research: the breeding of tumor organoids in the laboratory.

Read more:

<https://www.i-med.ac.at/mypoint/news/720079.html>

- **Award of Excellence für Fabian Schuler**



picture by MUI

Das Bundesministerium für Bildung, Wissenschaft und Forschung verleiht seit 2008 jährlich den Award of Excellence an die 40 besten AbsolventInnen von Doktoratsstudien innerhalb eines Studienjahres. Für seine herausragende Dissertation wurde vergangene Woche auch FABIAN SCHULER aus der Arbeitsgruppe Villunger ausgezeichnet. Er befasste sich in seiner Dissertation mit der Schlüsselrolle der

Kinase CHK1 in der B-Zell-Entwicklung und in der Entstehung sowie beim Überleben von B-Zell-Lymphomen.

### Award of Excellence for Fabian Schuler

Since 2008, the Federal Ministry of Education, Science and Research annually awards the Award of Excellence to the 40 best graduates of doctoral studies within a single academic year. FABIAN SCHULER from the group Villunger was honored for his outstanding dissertation. His dissertation deals with the key role of the kinase CHK1 in B-cell development and in the development and survival of B-cell lymphomas.

Read more:

<https://www.i-med.ac.at/mypoint/news/723574.html>

- **EMBO short term-fellowship - ALESSIA MASUCCIO – MEDICAL BIOCHEMISTRY**

The EMBO short-term fellowship has supported my short visit (40 days) last June 2018 in the laboratory of Prof. Matthias Peter at the ETH in Zurich. Over the last years, the research team guided by Matthias Peter has developed powerful biochemical and biophysical tools to study the degradative mechanisms involved in the regulation of cell growth and division. Their research has granted the ubiquitin field numerous insights into the functionality of the UPS, in particular of the CRLs, in cell cycle control in different model organisms such as *C. elegans* and in mammalian cells.

In the group of Prof. Ludger Hengst at the Biocenter, we have discovered that a clinically approved drug, lovastatin, leads to the degradation of Skp2 and cell cycle inhibition through an unexpected gain of function mechanism. We have evidence that such an E3 ligase subunit plays a role in regulating Skp2 stability and that this degradation pathway is strongly enhanced upon statin treatment.

In collaboration with Matthias Peter's group and under the supervision of Dr. Radoslav Enchev, we have expressed and purified in mammalian cells the novel ubiquitin ligase to reconstitute in vitro ubiquitination reactions. Work in our lab and in collaboration with Matthias Peter's group at the ETH is still on-going and it aims to address biochemically functional and structural aspects of Skp2 ubiquitination by the novel SCF E3 ligase.

- **Poster Preis Jahrestagung ÖGLMKC**



SIMON GEISLER aus der Gruppe Fuchs hat bei der Jahrestagung der ÖGLMKC mit dem Titel „Tryptophan, kynurenine and neopterin serum levels during dengue virus infection“ den Posterpreis erhalten.

SIMON GEISLER from the Fuchs group received the poster prize at the annual meeting of the ÖGLMKC with the title „Tryptophan, kynurenine and neopterin serum levels during dengue virus infection“.

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## New faces, Farewells & News

### Division of Medical Biochemistry

Ao.Univ.-Prof.Dr. WOLFGANG PIENDL left the Biocenter for good. He retired end of September after long years at the University. Thank you Wolfgang!

### Division of Molecular Biology

Christoph Sonderegger completed his PhD studies with great success in September and left the group of Florentine Marx-Ladurner. Congrats to Christoph!

Welcome to Anant Kakar MSc. As a student of DK HOROS he started in October his PhD thesis in Marx-Ladurners group.

### Here are some pictures from the legendary XMAS Party



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## Upcoming Events & Seminars

### CCB LECTURE SERIES

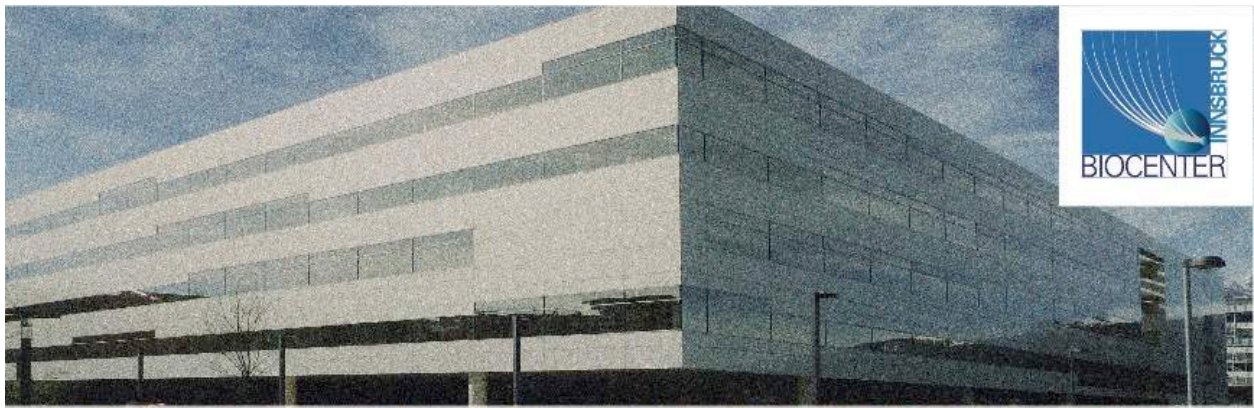


01. Oktober 2018 SINE REKER HÄDRUP – Danmarks Tekniske Universitet, DK  
**More T' please; strategies to identify and boost cancer specific T cells**
08. Oktober 2018 KONRAD BEYREUTHER, Universität Heidelberg, DE  
**Alzheimer Dementia as protein folding disease – Consequences for prevention and therapy**
15. Oktober 2018 BENOIT KORNMANN – ETH Zürich, CH  
**Organelle contact sites:  
What are they, what are they good for and how can they be bad**
19. November 2018 HOWARD RIEZMAN – Université Genève, CH  
**Novel technologies to study lipid metabolism and physiological functions**
10. Dezember 2018 RALF FICNER – Georg-August-Universität Göttingen, DE  
**Structural insights into RNA-processing enzymes**
17. Dezember 2018 SARAH HEDTRICH – Freie Universität Berlin, DE  
**3D organ models – Revolution in biomedical research?**
21. Jänner 2019 ROLAND LILL – Philipps-Universität Marburg, DE  
**Biogenesis of iron-sulfur proteins in eukaryotes:  
Mitochondria, mitosomes, mechanisms, and maladies**
18. Februar 2019 MARCUS CONRAD – Helmholtz Zentrum München, DE  
**Ferroptosis, a metabolic cell death pathway**
18. März 2019 MICHELA DIVIRGILIO – Max-Delbrück-Centrum für Molekulare Medizin Berlin, DE  
**At the crossroad between genome integrity & diversity**
29. April 2019 VIVEK MALHOTRA – CRG Barcelona, ES  
**Mechanism of collagen secretion and addressing collagenopathies**
20. Mai 2019 PEDRO CARVALHO – University of Oxford, Sir William Dunn School of Pathology, UK  
**Mechanisms of organelle biogenesis and quality control**
17. Juni 2019 VIGO HEISSMEYER – Ludwig-Maximilians-Universität München, DE  
**Post-transcriptional control of T cell differentiation**
01. Juli 2019 SEBASTIEN LEON – Université Paris Diderot, Institut Jaques Monod, FR  
**Molecular mechanisms coordinating nutrient transporter endocytosis with cellular physiology**

All guests are welcome

Seminars held at 5:00 PM in the CCB Seminar Room M 01.470





# Biocenter Seminar Series WS 2018/19

Date	Speaker Title	Workgroup, Fridays at 16:00 s.t.
05.10.18	<b>18. Jahrestagung der österreichischen Gesellschaft für Humangenetik (ÖGH)</b>	
12.10.18	<b>Stefan Coassin</b> Nanopore sequencing: potential and limitations	Division of Genetic Epidemiology, Kronenberg
19.10.18	<b>Eric C. Greene</b> Visualizing DNA repair enzymes at the single molecule level	Department of Biochemistry & Molecular Biophysics, Columbia University, New York
09.11.18	<b>Matthias Erlacher</b> Translation of non-standard nucleotides reveals minimal requirements for codon-anticodon interactions	Genomics and RNomics
16.11.18	<b>Nicole Concin</b> Translating robust research findings into early phase clinical trials	Department of Gynecology and Obstetrics
23.11.18	<b>Anming Huang</b> Role of posttranslational modifications in the biology of the centromeric histone variant CENP-A in <i>Drosophila melanogaster</i>	Molecular Biology, Lusser
30.11.18	<b>Plenary Lecture of the Wachter-Prize Awardee 2018</b>	
07.12.18	<b>Verena Petzer</b> Non-transferrin-bound iron in hematopoietic stem cell transplanted patients promotes <i>Aspergillus fumigatus</i> outgrowth	Department of Internal Medicine II, Weiss/Theurl
14.12.18	<b>Johanna Gostner</b> Biochemical toxicology: more than just simple substance testing	Medical Biochemistry
11.01.19	<b>Robin Alicia Kimmel</b> Pancreatic islet development and disease models	Institute of Molecular Biology/LFU
18.01.19	<b>Theresia Dunzendorfer-Matt</b> Scanning the RasGAP recruitment factor Spred1 surface for sticky sites	Biological Chemistry, Scheffzek
25.01.19	<b>Giorgia Lamberti</b> Enabling precision immuno-oncology in colorectal cancer	Bioinformatics, Trajanoski
01.02.19	<b>Katia Schöler</b> The miR17-92/BIM axis controls B lymphomagenesis	Developmental Immunology, Villunger

Happy Hour afterwards with beer and beverages sponsored by



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## Recent Publications

- 1: Gudmundsson S, Kahlhofer J, Baylac N, Kallio K, Eskelinen EL. Correlative Light and Electron Microscopy of Autophagosomes. *Methods Mol Biol.* 2019;1880:199-209. doi: 10.1007/978-1-4939-8873-0\_12. PubMed PMID: 30610698.
- 2: Liccardi G, Ramos Garcia L, Tenev T, Annibaldi A, Legrand AJ, Robertson D, Feltham R, Anderton H, Darding M, Peltzer N, Dannappel M, Schünke H, Fava LL, Haschka MD, Glatter T, Nesvizhskii A, Schmidt A, Harris PA, Bertin J, Gough PJ, Villunger A, Silke J, Pasparakis M, Bianchi K, Meier P. RIPK1 and Caspase-8 Ensure Chromosome Stability Independently of Their Role in Cell Death and Inflammation. *Mol Cell.* 2018 Dec 28. pii: S1097-2765(18)30980-8. doi: 10.1016/j.molcel.2018.11.010. [Epub ahead of print] PubMed PMID: 30598363.
- 3: Gostner JM, Fuchs D. Cardioprotective effect of polyamine spermidine. *Am J Clin Nutr.* 2018 Dec 21. doi: 10.1093/ajcn/nqy221. [Epub ahead of print] PubMed PMID: 30576404.
- 4: Schubert M, Hackl H, Gassner FJ, Greil R, Geisberger R. Investigating epigenetic effects of activation-induced deaminase in chronic lymphocytic leukemia. *PLoS One.* 2018 Dec 20;13(12):e0208753. doi: 10.1371/journal.pone.0208753. eCollection 2018. PubMed PMID: 30571766.
- 5: Gisslén M, Heslegrave A, Veleva E, Yilmaz A, Andersson LM, Hagberg L, Spudich S, Fuchs D, Price RW, Zetterberg H. CSF concentrations of soluble TREM2 as a marker of microglial activation in HIV-1 infection. *Neurol Neuroimmunol Neuroinflamm.* 2018 Nov 7;6(1):e512. doi: 10.1212/NXI.0000000000000512. eCollection 2019 Jan. PubMed PMID: 30568991; PubMed Central PMCID: PMC6278890.
- 6: Maio M, Coukos G, Ferrone S, Fox BA, Fridman WH, Garcia PL, Lahn M, Provendier O, Russo V, Rüttinger D, Shalabi A, Trajanoski Z, Viallet J, Wolchok JD, Ibrahim R. Addressing current challenges and future directions in immuno-oncology: expert perspectives from the 2017 NIBIT Foundation Think Tank, Siena, Italy. *Cancer Immunol Immunother.* 2018 Dec 18. doi: 10.1007/s00262-018-2285-y. [Epub ahead of print] PubMed PMID: 30564889.
- 7: Podmirseg SR, Vosper J, Hengst L. p27(Kip1) - p(RhoB)lematic in lung cancer. *J Pathol.* 2018 Dec 14. doi: 10.1002/path.5218. [Epub ahead of print] PubMed PMID: 30549261.
- 8: Binder U, Navarro-Mendoza MI, Naschberger V, Bauer I, Nicolas FE, Pallua JD, Lass-Flörl C, Garre V. Generation of A *Mucor circinelloides* Reporter Strain-A Promising New Tool to Study Antifungal Drug Efficacy and Mucormycosis. *Genes (Basel).* 2018 Dec 7;9(12). pii: E613. doi: 10.3390/genes9120613. PubMed PMID: 30544643.
- 9: Benhamou D, Labi V, Getahun A, Benchetrit E, Dowery R, Rajewsky K, Cambier JC, Melamed D. The c-Myc/miR17-92/PTEN Axis Tunes PI3K Activity to Control Expression of Recombination Activating Genes in Early B Cell Development. *Front Immunol.* 2018 Nov 22;9:2715. doi: 10.3389/fimmu.2018.02715. eCollection 2018. PubMed PMID: 30524445; PubMed Central PMCID: PMC6262168.
- 10: Trixl L, Rieder D, Amort T, Lusser A. Bisulfite Sequencing of RNA for Transcriptome-Wide Detection of 5-Methylcytosine. *Methods Mol Biol.* 2019;1870:1-21. doi: 10.1007/978-1-4939-8808-2\_1. PubMed PMID: 30539543.
- 11: Hofer S, Stonig M, Wally V, Hartmann A, Fuchs D, Hermann M, Paparella M, Ganzera M, Gostner JM. Contradictory effects of chemical filters in UV/ROS-stressed human keratinocyte and fibroblast cells. *ALTEX.* 2018 Nov 27. doi: 10.14573/altex.1808201. [Epub ahead of print] PubMed PMID: 30488083.
- 12: Dietl AM, Binder U, Shadkchan Y, Osherov N, Haas H. Siroheme Is Essential for

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Assimilation of Nitrate and Sulfate as Well as Detoxification of Nitric Oxide but Dispensable for Murine Virulence of *Aspergillus fumigatus*. *Front Microbiol.* 2018 Nov 12;9:2615. doi: 10.3389/fmicb.2018.02615. eCollection 2018. PubMed PMID: 30483221; PubMed Central PMCID: PMC6240589.

13: Kovács R, Holzknecht J, Hargitai Z, Papp C, Farkas A, Borics A, Tóth L, Váradi G, Tóth GK, Kovács I, Dubrac S, Majoros L, Marx F, Galgóczy L. In vivo applicability of Neosartorya fischeri antifungal protein 2 (NFAP2) in treatment of vulvovaginal candidiasis. *Antimicrob Agents Chemother.* 2018 Nov 26. pii: AAC.01777-18. doi: 10.1128/AAC.01777-18. [Epub ahead of print] PubMed PMID: 30478163.

14: Hoernes TP, Faserl K, Juen MA, Kremser J, Gasser C, Fuchs E, Shi X, Siewert A, Lindner H, Kreutz C, Micura R, Joseph S, Höbartner C, Westhof E, Hüttenhofer A, Erlacher MD. Translation of non-standard codon nucleotides reveals minimal requirements for codon-anticodon interactions. *Nat Commun.* 2018 Nov 19;9(1):4865. doi: 10.1038/s41467-018-07321-8. PubMed PMID: 30451861; PubMed Central PMCID: PMC6242847.

15: Zschiebsch K, Fischer C, Wilken-Schmitz A, Geisslinger G, Channon K, Watschinger K, Tegeder I. Mast cell tetrahydrobiopterin contributes to itch in mice. *J Cell Mol Med.* 2018 Nov 18. doi: 10.1111/jcmm.13999. [Epub ahead of print] PubMed PMID: 30450838.

16: Cronin SJF, Seehus C, Weidinger A, Talbot S, Reissig S, Seifert M, Pierson Y, McNeill E, Longhi MS, Turnes BL, Kreslavsky T, Kogler M, Hoffmann D, Ticevic M, da Luz Scheffer D, Tortola L, Cikes D, Jais A, Rangachari M, Rao S, Paolino M, Novatchkova M, Aichinger M, Barrett L, Latremoliere A, Wirnsberger G, Lametschwandtner G, Busslinger M, Zicha S, Latini A, Robson SC, Waisman A, Andrews N, Costigan M, Channon KM, Weiss G, Kozlov AV, Tebbe M, Johnsson K, Woolf CJ, Penninger JM. The metabolite BH4 controls T cell proliferation in autoimmunity and cancer. *Nature.* 2018 Nov;563(7732):564-568. doi: 10.1038/s41586-018-0701-2. Epub 2018 Nov 7. PubMed PMID: 30405245.

17: Misslinger M, Lechner BE, Bacher K, Haas H. Iron-sensing is governed by mitochondrial, not by cytosolic iron-sulfur cluster biogenesis in *Aspergillus fumigatus*. *Metallomics.* 2018 Nov 14;10(11):1687-1700. doi: 10.1039/c8mt00263k. PubMed PMID: 30395137; PubMed Central PMCID: PMC6250123.

18: Strutz J, Cvitic S, Hackl H, Kashofer K, Appel HM, Thüringer A, Desoye G, Koolwijk P, Hiden U. Gestational diabetes alters microRNA signatures in human fetoplacental endothelial cells depending on fetal sex. *Clin Sci (Lond).* 2018 Nov 21;132(22):2437-2449. doi: 10.1042/CS20180825. Print 2018 Nov 30. PubMed PMID: 30389858.

19: Knaus HA, Berglund S, Hackl H, Blackford AL, Zeidner JF, Montiel-Esparza R, Mukhopadhyay R, Vanura K, Blazar BR, Karp JE, Luznik L, Gojo I. Signatures of CD8+ T cell dysfunction in AML patients and their reversibility with response to chemotherapy. *JCI Insight.* 2018 Nov 2;3(21). pii: 120974. doi: 10.1172/jci.insight.120974. [Epub ahead of print] PubMed PMID: 30385732; PubMed Central PMCID: PMC6238744.

20: Steger M, Bermejo-Jambrina M, Yordanov T, Wagener J, Brakhage AA, Pittl V, Huber LA, Haas H, Lass-Flörl C, Posch W, Wilflingseder D.  $\beta$ -1,3-glucan-lacking *Aspergillus fumigatus* mediates an efficient antifungal immune response by activating complement and dendritic cells. *Virulence.* 2018 Oct 29:1-13. doi: 10.1080/21505594.2018.1528843. [Epub ahead of print] PubMed PMID: 30372658.

21: Long N, Orasch T, Zhang S, Gao L, Xu X, Hortschansky P, Ye J, Zhang F, Xu K, Gsaller F, Straßburger M, Binder U, Heinekamp T, Brakhage AA, Haas H, Lu L. The Zn2Cys6-type transcription factor LeuB cross-links regulation of leucine biosynthesis and iron acquisition in *Aspergillus fumigatus*. *PLoS Genet.* 2018 Oct 26;14(10):e1007762. doi: 10.1371/journal.pgen.1007762. eCollection 2018 Oct.



---

PubMed PMID: 30365497; PubMed Central PMCID: PMC6221358.

22: Petrik M, Umlaufova E, Raclavsky V, Palyzova A, Havlicek V, Haas H, Novy Z, Dolezal D, Hajduch M, Decristoforo C. Imaging of *Pseudomonas aeruginosa* infection with Ga-68 labelled pyoverdine for positron emission tomography. *Sci Rep.* 2018 Oct 24;8(1):15698. doi: 10.1038/s41598-018-33895-w. PubMed PMID: 30356077; PubMed Central PMCID: PMC6200719.

23: Weiss AKH, Naschberger A, Loeffler JR, Gstach H, Bowler MW, Holzknecht M, Cappuccio E, Pittl A, Etemad S, Dunzendorfer-Matt T, Scheffzek K, Liedl KR, Jansen-Dürr P. Structural basis for the bi-functionality of human oxaloacetate decarboxylase FAHD1. *Biochem J.* 2018 Nov 20;475(22):3561-3576. doi: 10.1042/BCJ20180750. PubMed PMID: 30348641.

24: Finotello F, Eduati F. Multi-Omics Profiling of the Tumor Microenvironment: Paving the Way to Precision Immuno-Oncology. *Front Oncol.* 2018 Oct 5;8:430. doi: 10.3389/fonc.2018.00430. eCollection 2018. Review. PubMed PMID: 30345255; PubMed Central PMCID: PMC6182075.

25: Garrigues S, Gandía M, Castillo L, Coca M, Marx F, Marcos JF, Manzanares P. Three Antifungal Proteins From *Penicillium expansum*: Different Patterns of Production and Antifungal Activity. *Front Microbiol.* 2018 Oct 5;9:2370. doi: 10.3389/fmicb.2018.02370. eCollection 2018. PubMed PMID: 30344516; PubMed Central PMCID: PMC6182064.

26: Akram F, Fuchs D, Daue M, Nijjar G, Ryan A, Benros ME, Okusaga O, Baca-Garcia E, Brenner LA, Lowry CA, Ryan KA, Pavlovich M, Mitchell BD, Snitker S, Postolache TT. Association of plasma nitrite levels with obesity and metabolic syndrome in the Old Order Amish. *Obes Sci Pract.* 2018 Aug 1;4(5):468-476. doi: 10.1002/osp4.290. eCollection 2018 Oct. PubMed PMID: 30338117; PubMed Central PMCID: PMC6180710.

27: Neuner E, Frener M, Lusser A, Micura R. Superior cellular activities of azido- over amino-functionalized ligands for engineered preQ(1) riboswitches in *E.coli*. *RNA Biol.* 2018;15(10):1376-1383. doi: 10.1080/15476286.2018.1534526. Epub 2018 Oct 26. PubMed PMID: 30332908; PubMed Central PMCID: PMC6284575.

28: Fizil Á, Sonderegger C, Czajlik A, Fekete A, Komáromi I, Hajdu D, Marx F, Batta G. Calcium binding of the antifungal protein PAF: Structure, dynamics and function aspects by NMR and MD simulations. *PLoS One.* 2018 Oct 15;13(10):e0204825. doi: 10.1371/journal.pone.0204825. eCollection 2018. PubMed PMID: 30321182; PubMed Central PMCID: PMC6188699.

29: Summer D, Mayr S, Petrik M, Rangger C, Schoeler K, Vieider L, Matuszczak B, Decristoforo C. Pretargeted Imaging with Gallium-68-Improving the Binding Capability by Increasing the Number of Tetrazine Motifs. *Pharmaceuticals (Basel).* 2018 Oct 11;11(4). pii: E102. doi: 10.3390/ph11040102. PubMed PMID: 30314332.

30: Trixl L, Lusser A. The dynamic RNA modification 5-methylcytosine and its emerging role as an epitranscriptomic mark. *Wiley Interdiscip Rev RNA.* 2019 Jan;10(1):e1510. doi: 10.1002/wrna.1510. Epub 2018 Oct 11. Review. PubMed PMID: 30311405.

31: Hammerl D, Rieder D, Martens JWM, Trajanoski Z, Debets R. Adoptive T Cell Therapy: New Avenues Leading to Safe Targets and Powerful Allies. *Trends Immunol.* 2018 Nov;39(11):921-936. doi: 10.1016/j.it.2018.09.004. Epub 2018 Oct 9. Review. PubMed PMID: 30309702.

32: Sambo F, Finotello F, Lavezzo E, Baruzzo G, Masi G, Peta E, Falda M, Toppo S, Barzon L, Di Camillo B. Optimizing PCR primers targeting the bacterial 16S ribosomal RNA gene. *BMC Bioinformatics.* 2018 Sep 29;19(1):343. doi: 10.1186/s12859-018-2360-6. PubMed PMID: 30268091; PubMed Central PMCID: PMC6162885.

- 
- 33: Valdiglesias V, Marcos-Pérez D, Lorenzi M, Onder G, Gostner JM, Strasser B, Fuchs D, Bonassi S. Immunological alterations in frail older adults: A cross sectional study. *Exp Gerontol*. 2018 Oct 2;112:119-126. doi: 10.1016/j.exger.2018.09.010. Epub 2018 Sep 18. PubMed PMID: 30240849.
- 34: Ottina E, Sochalska M, Sgonc R, Villunger A. Correction to: The BH3-only protein Bad is dispensable for TNF-mediated cell death. *Cell Death Dis*. 2018 Sep 5;9(9):901. doi: 10.1038/s41419-018-0947-5. PubMed PMID: 30185792; PubMed Central PMCID: PMC6125366.
- 35: Jakic B, Carlsson M, Buszko M, Cappellano G, Ploner C, Onestingel E, Foti M, Hackl H, Demetz E, Dietrich H, Wick C, Wick G. The Effects of Endurance Exercise and Diet on Atherosclerosis in Young and Aged ApoE<sup>-/-</sup> and Wild-Type Mice. *Gerontology*. 2018 Aug 30:1-12. doi: 10.1159/000492571. [Epub ahead of print] PubMed PMID: 30165362.
- 36: Engevik AC, Kaji I, Engevik MA, Meyer AR, Weis VG, Goldstein A, Hess MW, Müller T, Koepsell H, Dudeja PK, Tyska M, Huber LA, Shub MD, Ameen N, Goldenring JR. Loss of MYO5B Leads to Reductions in Na<sup>(+)</sup> Absorption With Maintenance of CFTR-Dependent Cl<sup>(-)</sup> Secretion in Enterocytes. *Gastroenterology*. 2018 Dec;155(6):1883-1897.e10. doi: 10.1053/j.gastro.2018.08.025. Epub 2018 Aug 23. PubMed PMID: 30144427; PubMed Central PMCID: PMC6279525.
- 37: Beckmeyer-Borowko A, Imboden M, Rezwani FI, Wielscher M, Amaral AFS, Jeong A, Schaffner E, Auvinen J, Seibert S, Karhunen V, Bettschart R, Turk A, Pons M, Stolz D, Kronenberg F, Arathimos R, Sharp GC, Relton C, Henderson AJ, Jarvelin MR, Jarvis D, Holloway JW, Probst-Hensch NM. SERPINA1 methylation and lung function in tobacco-smoke exposed European children and adults: a meta-analysis of ALEC population-based cohorts. *Respir Res*. 2018 Aug 22;19(1):156. doi: 10.1186/s12931-018-0850-8. PubMed PMID: 30134983; PubMed Central PMCID: PMC6103990.
- 38: Tsibulak I, Wieser V, Degasper C, Shivalingaiah G, Wenzel S, Sprung S, Lax SF, Marth C, Fiegl H, Zeimet AG. BRCA1 and BRCA2 mRNA-expression prove to be of clinical impact in ovarian cancer. *Br J Cancer*. 2018 Sep;119(6):683-692. doi: 10.1038/s41416-018-0217-4. Epub 2018 Aug 15. PubMed PMID: 30111871.
- 39: Scheffzek K, Shivalingaiah G. Ras-Specific GTPase-Activating Proteins-Structures, Mechanisms, and Interactions. *Cold Spring Harb Perspect Med*. 2018 Aug 13. pii: a031500. doi: 10.1101/cshperspect.a031500. [Epub ahead of print] PubMed PMID: 30104198.
- 40: Leblhuber F, Steiner K, Schuetz B, Fuchs D, Gostner JM. Probiotic Supplementation in Patients with Alzheimer's Dementia - An Explorative Intervention Study. *Curr Alzheimer Res*. 2018;15(12):1106-1113. doi: 10.2174/1389200219666180813144834. PubMed PMID: 30101706.
- 41: Migliano SM, Teis D. ESCRT and Membrane Protein Ubiquitination. *Prog Mol Subcell Biol*. 2018;57:107-135. doi: 10.1007/978-3-319-96704-2\_4. PubMed PMID: 30097773.
- 42: Sonderegger C, Váradi G, Galgóczy L, Kocsubé S, Posch W, Borics A, Dubrac S, Tóth GK, Wilflingseder D, Marx F. The Evolutionary Conserved  $\gamma$ -Core Motif Influences the Anti-Candida Activity of the *Penicillium chrysogenum* Antifungal Protein PAF. *Front Microbiol*. 2018 Jul 20;9:1655. doi: 10.3389/fmicb.2018.01655. eCollection 2018. PubMed PMID: 30079061; PubMed Central PMCID: PMC6062912.
- 43: Ecker F, Haas H, Groll M, Huber EM. Iron Scavenging in *Aspergillus* Species: Structural and Biochemical Insights into Fungal Siderophore Esterases. *Angew Chem Int Ed Engl*. 2018 Oct 26;57(44):14624-14629. doi: 10.1002/anie.201807093. Epub 2018 Aug 27. PubMed PMID: 30070018.

---

44: Léon S, Teis D. Functional patchworking at the plasma membrane. *EMBO J.* 2018 Aug 15;37(16). pii: e100144. doi: 10.15252/embj.2018100144. Epub 2018 Jul 30. PubMed PMID: 30061314; PubMed Central PMCID: PMC6092615.

45: Summer D, Kroess A, Woerndle R, Rangger C, Klingler M, Haas H, Kremser L, Lindner HH, von Guggenberg E, Decristoforo C. Multimerization results in formation of re-bindable metabolites: A proof of concept study with FSC-based minigastrin imaging probes targeting CCK2R expression. *PLoS One.* 2018 Jul 30;13(7):e0201224. doi: 10.1371/journal.pone.0201224. eCollection 2018. PubMed PMID: 30059514; PubMed Central PMCID: PMC6066219.

46: Jahreis S, Böttcher S, Hartung S, Rachow T, Rummeler S, Dietl AM, Haas H, Walther G, Hochhaus A, von Lilienfeld-Toal M. Human MAIT cells are rapidly activated by *Aspergillus* spp. in an APC-dependent manner. *Eur J Immunol.* 2018 Oct;48(10):1698-1706. doi: 10.1002/eji.201747312. Epub 2018 Aug 13. PubMed PMID: 30059139.

47: Peng X, Brenner LA, Mathai AJ, Cook TB, Fuchs D, Postolache N, Groer MW, Pandey JP, Mohyuddin F, Giegling I, Wadhawan A, Hartmann AM, Konte B, Brundin L, Friedl M, Stiller JW, Lowry CA, Rujescu D, Postolache TT. Moderation of the relationship between *Toxoplasma gondii* seropositivity and trait impulsivity in younger men by the phenylalanine-tyrosine ratio. *Psychiatry Res.* 2018 Dec;270:992-1000. doi: 10.1016/j.psychres.2018.03.045. Epub 2018 Mar 22. PubMed PMID: 30057257.

48: Dietl AM, Meir Z, Shadkchan Y, Osherov N, Haas H. Riboflavin and pantothenic acid biosynthesis are crucial for iron homeostasis and virulence in the pathogenic mold *Aspergillus fumigatus*. *Virulence.* 2018;9(1):1036-1049. doi: 10.1080/21505594.2018.1482181. PubMed PMID: 30052132; PubMed Central PMCID: PMC6068542.

49: Heine M, Fischer AW, Schlein C, Jung C, Straub LG, Gottschling K, Mangels N, Yuan Y, Nilsson SK, Liebscher G, Chen O, Schreiber R, Zechner R, Scheja L, Heeren J. Lipolysis Triggers a Systemic Insulin Response Essential for Efficient Energy Replenishment of Activated Brown Adipose Tissue in Mice. *Cell Metab.* 2018 Oct 2;28(4):644-655.e4. doi: 10.1016/j.cmet.2018.06.020. Epub 2018 Jul 19. PubMed PMID: 30033199.

50: Ulfhammer G, Edén A, Mellgren Å, Fuchs D, Zetterberg H, Hagberg L, Nilsson S, Yilmaz A, Gisslén M. Persistent central nervous system immune activation following more than 10 years of effective HIV antiretroviral treatment. *AIDS.* 2018 Sep 24;32(15):2171-2178. doi: 10.1097/QAD.0000000000001950. PubMed PMID: 30005007.

51: Van Dijck P, Sjollem J, Cammue BP, Lagrou K, Berman J, d'Enfert C, Andes DR, Arendrup MC, Brakhage AA, Calderone R, Cantón E, Coenye T, Cos P, Cowen LE, Edgerton M, Espinel-Ingroff A, Filler SG, Ghannoum M, Gow NAR, Haas H, Jabra-Rizk MA, Johnson EM, Lockhart SR, Lopez-Ribot JL, Maertens J, Munro CA, Nett JE, Nobile CJ, Pfaller MA, Ramage G, Sanglard D, Sanguinetti M, Spriet I, Verweij PE, Warris A, Wauters J, Yeaman MR, Zaat SAJ, Thevissen K. Methodologies for in vitro and in vivo evaluation of efficacy of antifungal and antibiofilm agents and surface coatings against fungal biofilms. *Microb Cell.* 2018 Jun 14;5(7):300-326. doi: 10.15698/mic2018.07.638. Review. PubMed PMID: 29992128; PubMed Central PMCID: PMC6035839.

52: Ciaghi S, Neuhauser S, Schwelm A. Draft Genome Resource for the Potato Powdery Scab Pathogen *Spongospora subterranea*. *Mol Plant Microbe Interact.* 2018 Dec;31(12):1227-1229. doi: 10.1094/MPMI-06-18-0163-A. Epub 2018 Oct 15. PubMed PMID: 29969057.

53: van den Ameele S, Fuchs D, Coppens V, de Boer P, Timmers M, Sabbe B, Morrens M. Markers of Inflammation and Monoamine Metabolism Indicate Accelerated Aging in Bipolar Disorder. *Front Psychiatry.* 2018 Jun 14;9:250. doi:

---

10.3389/fpsyt.2018.00250. eCollection 2018. PubMed PMID: 29962973; PubMed Central PMCID: PMC6010913.

54: Jocher G, Mannschatz SH, Offterdinger M, Schweigreiter R. Microfluidics of Small-Population Neurons Allows for a Precise Quantification of the Peripheral Axonal Growth State. *Front Cell Neurosci.* 2018 Jun 15;12:166. doi: 10.3389/fncel.2018.00166. eCollection 2018. PubMed PMID: 29962939; PubMed Central PMCID: PMC6013724.

55: Homa M, Galgóczy L, Manikandan P, Narendran V, Sinka R, Cserecics Á, Vágvölgyi C, Kredics L, Papp T. South Indian Isolates of the *Fusarium solani* Species Complex From Clinical and Environmental Samples: Identification, Antifungal Susceptibilities, and Virulence. *Front Microbiol.* 2018 May 23;9:1052. doi: 10.3389/fmicb.2018.01052. eCollection 2018. PubMed PMID: 29875757; PubMed Central PMCID: PMC5974209.

56: Marcos-Pérez D, Sánchez-Flores M, Maseda A, Lorenzo-López L, Millán-Calenti JC, Gostner JM, Fuchs D, Pásaro E, Laffon B, Valdiglesias V. Frailty in Older Adults Is Associated With Plasma Concentrations of Inflammatory Mediators but Not With Lymphocyte Subpopulations. *Front Immunol.* 2018 May 16;9:1056. doi: 10.3389/fimmu.2018.01056. eCollection 2018. PubMed PMID: 29868017; PubMed Central PMCID: PMC5964167.

57: Walter C, Gonczarowska-Jorge H, Sickmann A, Zahedi RP, Meisinger C, Schmidt O. Advanced tools for the analysis of protein phosphorylation in yeast mitochondria. *Anal Biochem.* 2018 Aug 1;554:23-27. doi: 10.1016/j.ab.2018.05.022. Epub 2018 May 24. PubMed PMID: 29803787.

58: Waldner A, Dassati S, Redl B, Smania N, Gandolfi M. Apolipoprotein D Concentration in Human Plasma during Aging and in Parkinson's Disease: A Cross-Sectional Study. *Parkinsons Dis.* 2018 Mar 26;2018:3751516. doi: 10.1155/2018/3751516. eCollection 2018. PubMed PMID: 29780571; PubMed Central PMCID: PMC5892211.

59: Xia W, Pessentheiner AR, Hofer DC, Amor M, Schreiber R, Schoiswohl G, Eichmann TO, Walenta E, Itariu B, Prager G, Hackl H, Stulnig T, Kratky D, Rüllicke T, Bogner-Strauss JG. Loss of ABHD15 Impairs the Anti-lipolytic Action of Insulin by Altering PDE3B Stability and Contributes to Insulin Resistance. *Cell Rep.* 2018 May 15;23(7):1948-1961. doi: 10.1016/j.celrep.2018.04.055. PubMed PMID: 29768196.

60: Reininghaus B, Riedrich K, Dalkner N, Bengesser SA, Birner A, Platzer M, Hamm C, Gostner JM, Fuchs D, Reininghaus EZ. Changes in the tryptophan-kynurenine axis in association to therapeutic response in clinically depressed patients undergoing psychiatric rehabilitation. *Psychoneuroendocrinology.* 2018 Aug;94:25-30. doi: 10.1016/j.psyneuen.2018.04.029. Epub 2018 May 6. PubMed PMID: 29753175.

61: Kurucz V, Krüger T, Antal K, Dietl AM, Haas H, Pócsi I, Kniemeyer O, Emri T. Additional oxidative stress reroutes the global response of *Aspergillus fumigatus* to iron depletion. *BMC Genomics.* 2018 May 10;19(1):357. doi: 10.1186/s12864-018-4730-x. PubMed PMID: 29747589; PubMed Central PMCID: PMC5946477.

62: Pidroni A, Faber B, Brosch G, Bauer I, Graessle S. A Class 1 Histone Deacetylase as Major Regulator of Secondary Metabolite Production in *Aspergillus nidulans*. *Front Microbiol.* 2018 Sep 19;9:2212. doi: 10.3389/fmicb.2018.02212. eCollection 2018. Erratum in: *Front Microbiol.* 2018 Nov 09;9:2714. PubMed PMID: 30283426; PubMed Central PMCID: PMC6156440.