



## NOBEL PRIZE FOR CHEMISTRY 2020

The 2020 Nobel Prize for Chemistry was awarded to Emmanuelle Charpentier and Jennifer Doudna for their groundbreaking discoveries on the CRISPR/Cas9 system. Emmanuelle Charpentier was a principal investigator at the Max Perutz Labs at the University of Vienna from 2002 to 2009, where she laid the groundwork for developing the technology.

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## COVID TESTING OVER CHRISTMAS

December 2020											January 2021												
21	22	23*	24	25	26	27	28	29	30*	31	1	2	3	4	5	6	7	8	9	10	11	12	13

Testing (submit your sample by 10am)

no testing (holiday/weekend)

no testing (workday)

\*more info will follow in a separate email

## RESEARCH INSTITUTES' NEWS

### INSTITUTE OF MOLECULAR PATHOLOGY



#### ERC STARTING GRANT AWARDED TO CLEMENS PLASCHKA

The European Research Council (ERC) has selected IMP group leader Clemens Plaschka's research for funding under the Horizon 2020 Excellent Science scheme. His project studying the mechanism of messenger RNA packaging and export will be supported with 1.5 million Euro through a Starting Grant over the next five years.

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#### PREIS DER STADT WIEN

##### FORMER IMP DEPUTY DIRECTOR MEINRAD BUSSLINGER

In the field of mathematics, informatics, science and technology, the IMP immunologist and deputy director Meinrad Busslinger was chosen as the laureate of 2020. Since 1947, the City of Vienna honours residents distinguished in a range of disciplines with the "Preis der Stadt Wien" awards for their life achievements.

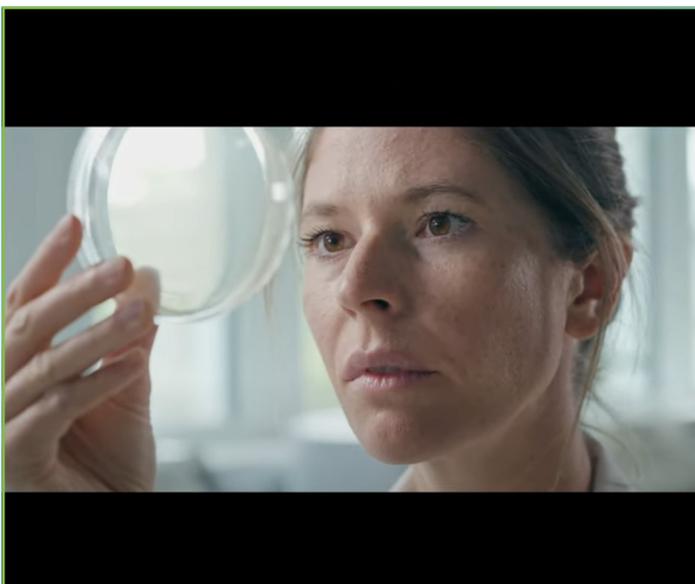
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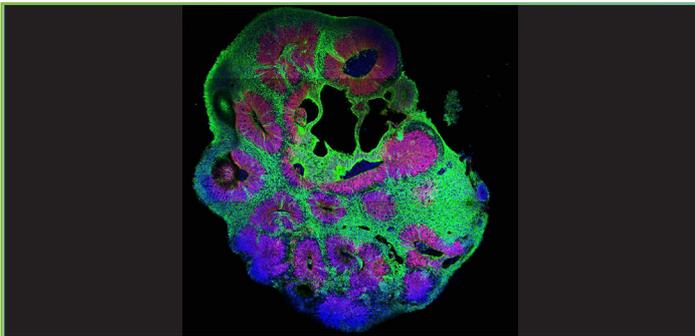
#### IMP IMAGE VIDEO CELEBRATES CURIOSITY

A new video of the IMP twists the idea of an image film: rather than presenting the institution, the IMP serves merely as scenery for the essential driver behind the institute - curiosity. Two fictional pursuits of intellectual breakthroughs are interwoven to highlight the IMP as a place that enables scientists to harness their curiosity and make good use of it.

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## INSTITUTE OF MOLECULAR BIOTECHNOLOGY AUSTRIA



Immunofluorescence brain organoid with stem cells in red, neurons in green and nuclei in blue.

### GENETIC SCREENING TOOL FOR HUMAN ORGANOIDS

Researchers from the laboratory of Jürgen Knoblich at IMBA – Institute of Molecular Biotechnology of the Austrian Academy of Sciences – developed CRISPR-LICHT, a revolutionary technology that allows genetic screens in human tissues such as brain organoids.

[MORE](#)

### RABITSCH AWARD 2020

**Merve Deniz Abdusselamoglu**, alumna from Jürgen Knoblich's lab at IMBA, is awarded the Kirsten Peter Rabitsch Award for the best PhD thesis at IMP and IMBA.



Vials with samples after the colour change show positive (yellow) or negative (red) test results.

### NEW SARS-COV-2 TEST „MADE IN VIENNA“

Scientists from the Vienna BioCenter developed a new SARS-CoV-2 detection method: by rather simple means, their RT-LAMP test is cheaper than PCR testing and achieves results with comparable sensitivity and specificity.

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### IMP-IMBA INTER-INSTITUTIONAL CONTRIBUTIONS TO VCDI

Since spring, mixed teams of IMP and IMBA scientists have worked on the development of innovative testing strategies and approaches. Results from this endeavour are now precipitating in publications and media interest. Especially monitoring regimes developed with contributions by Johannes Zuber, **RT-LAMP** protocols steered by Julius Brennecke and Andrea Pauli, and an **NGS technique** developed by Ulrich Elling, Luisa Cochella, and Alexander Stark met a strong echo in both scientific and public community.

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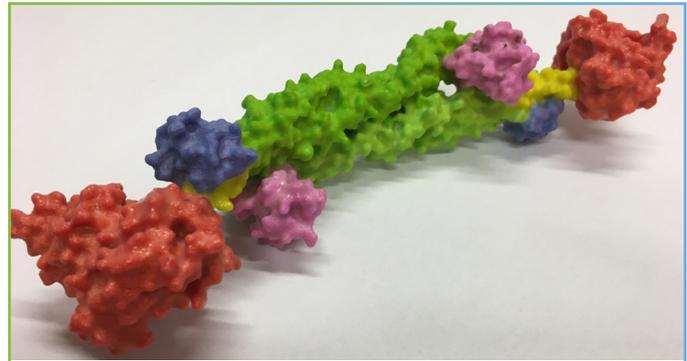


## MAX PERUTZ LABS



### NOBEL PRIZE FOR CHEMISTRY 2020

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### CALCIUM CAUSES STIFF JOINTS IN $\alpha$ -ACTININ

In a publication in PNAS, the Djinic Lab has revealed the molecular structure of a calcium-regulated form of  $\alpha$ -actinin, with implications for human forms of the protein, as well as amoebic dysentery caused by *E. histolytica*.

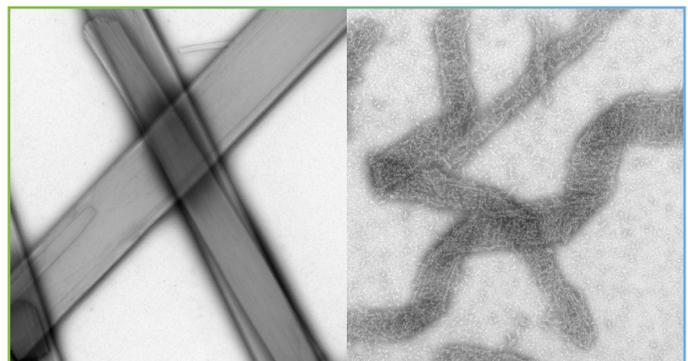
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### WHAT IS THE ORIGIN OF THE GENETIC CODE?

Bojan Zagrovic and his collaborators will be supported by the Volkswagen Foundation to test the mRNA-protein complementarity hypothesis, a novel and still controversial idea that could help explain the origin of the universal genetic code.

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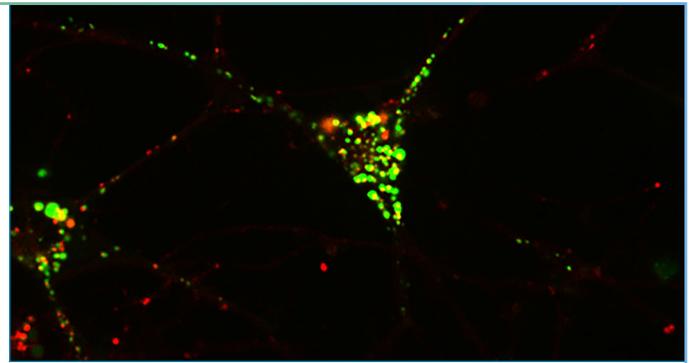
### “NO SERVICE!”

### HOW VACCINIA VIRUS JAMS IMMUNE SIGNALING

New research from the lab of Tim Skern in “Structure” shows how the vaccinia virus protein A46 disrupts host immune signaling by jamming the cellular transmission chain.

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## MAX PERUTZ LABS (CONT.)



## NEWS FROM THE MARTENS LAB

### AUTOPHAGY: THE BEGINNING OF THE END

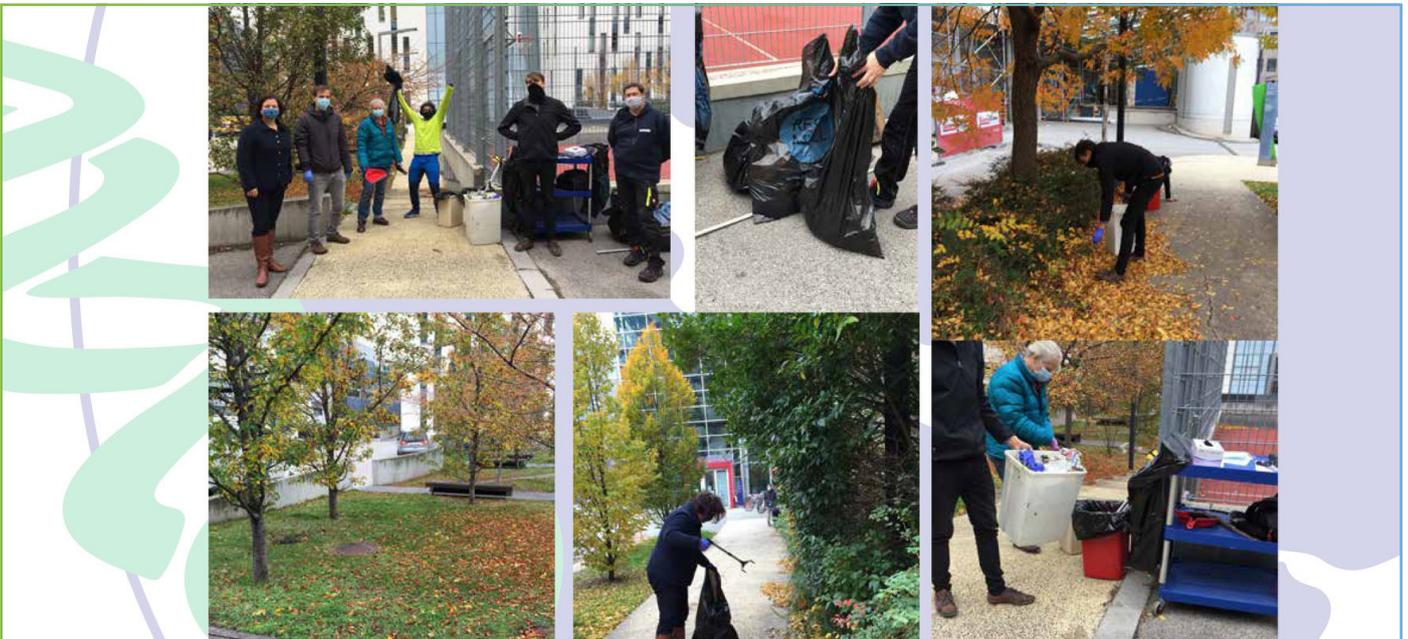
In a paper in *Science*, the group has reconstructed the earliest steps in the formation of autophagosomes.

[MORE](#)

### ASAP GRANT FOR SASCHA MARTENS

As part of a project team, the lab has also been awarded a grant by the Aligning Science across Parkinson's Initiative (ASAP) to study the mechanism of mitophagy and its involvement in Parkinson's Disease.

[MORE](#)



## CAMPUS CLEAN UP

30kg of garbage were collected and disposed of properly during Vienna BioCenter „Campus Clean Up“. Thanks to the organizers, Climate@MaxPerutzlabs group, and all the participants from IMBA, IMP, GMI and VBCF!

Want to know more about Sustainability and CO<sub>2</sub> Neutrality?

[CLIMATE.GROUP@MFPL.AC.AT](mailto:CLIMATE.GROUP@MFPL.AC.AT)

[GO TO OUR YOUTUBE CHANNEL](#)

## VIENNA BIOCENTER CORE FACILITIES



## NEXT GENERATION SEQUENCING

### SECOND NEXTSEQ SYSTEM

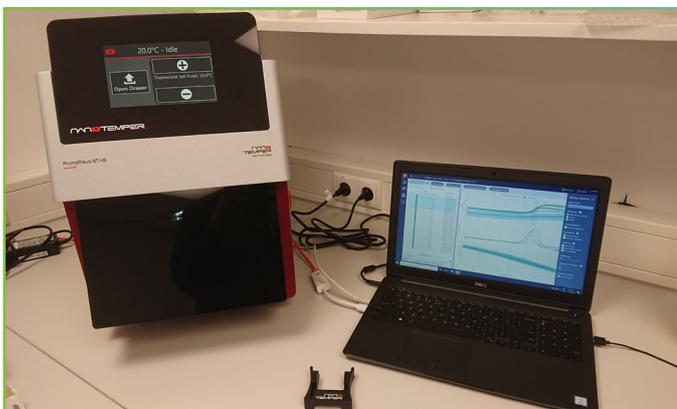
The facility has acquired a second **NextSeq system** which provides the much needed capacity, redundancy and flexibility for sequencing applications. The NextSeq 2000 P2 flowcells correspond to the High-Output flowcells of the NextSeq 550 (300-400 million reads) and the kits are available with 100, 200, and 300 cycles. Reads of the NextSeq 2000 are compatible with all other Illumina sequencers.

### NEW PROMETHION NANOPORE SEQUENCER

The second large investment is a **PromethION nanopore sequencer** provided by Oxford Nanopore Technologies (ONT). The PromethION is the high throughput version of the well known MinION system and delivers up to 100GB of data per flowcell and up to 48 flowcells can be run in parallel combined with ultra-long reads (up to 1Mb). Nanopore sequencing is a major game changer and opens the door for novel applications and protocols.

[ANDREAS.SOMMER@VBCF.AC.AT](mailto:ANDREAS.SOMMER@VBCF.AC.AT)

## VIENNA BIOCENTER CORE FACILITIES

 PROTEIN TECHNOLOGIES

## NANOTEMPER PROMETHEUS NT.48

The **NanoTemper Prometheus** is a multi-purpose, label-free instrument measuring both intrinsic protein fluorescence and scattering while applying a defined temperature profile. Structural changes (folding/unfolding) as well as aggregation can be monitored over time, as a function of temperature, or under different chemical conditions. Since a sensitive fluorescence detection setup is used, only a minute protein sample is needed ( $>5\mu\text{g/ml}$ ,  $10\mu\text{l}$ ). Using the Prometheus as a tool for day-to-day protein quality checks will improve the reproducibility of subsequent experiments that use purified proteins for structural and interaction studies while screening for potential binders can open up subsequent avenues of investigation.

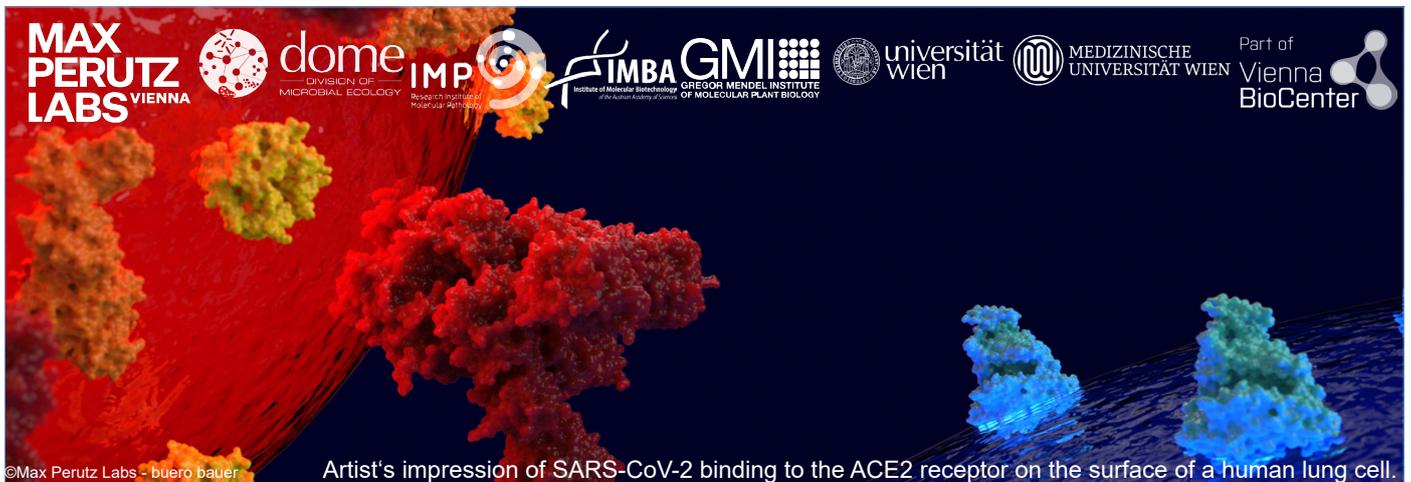
## CREOPTIX™ WAVEDELTA

The **Creoptix™ WAVE** is a novel, highly sensitive label-free biosensor used to analyze the affinity and kinetics of molecular interactions. Based on Grating Coupled Interferometry technology, the Creoptix™ WAVE provides similar information to the well-known Surface Plasmon Resonance biosensors but with greatly improved features.

Combined with user friendly and robust analysis software, the Creoptix™ WAVE is ideal to study many different sample types and systems including those previously inaccessible using conventional biosensors.

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## VIENNA BIOCENTER CORE FACILITIES



©Max Perutz Labs - buero bauer

Artist's impression of SARS-CoV-2 binding to the ACE2 receptor on the surface of a human lung cell.



## A NEW FACILITY: SARS-COV2-SCREENING

### BUILDING A COVID-19 TESTING INFRASTRUCTURE ON CAMPUS

In a collaborative, inter-institutional effort to combat the SARS-CoV-2 coronavirus, research institutes at the Vienna BioCenter and the University of Vienna have repurposed existing resources and expertise, and invested in new infrastructure to develop capacities for detecting SARS-CoV-2.

The Vienna COVID19 detection initiative (VCDI) promotes a strategy for frequent, large-scale population screening to avoid further lockdowns and damage caused by uncontrolled spreading of the virus through asymptomatic individuals.

Almost 1.800 people from all VBC academic institutions and 24 VBC companies participate in the SARS-CoV2-Screening on campus. Since April 2020, a total of approx. 35.000 samples were analysed using [a freely available qPCR method](#). Of these, 79 individuals were tested positive. The commitment of all involved and the cooperation of VBC employees made the VBC a safe workplace and prevented COVID19 cluster formation on campus.

Since April 2020, the PCR testing pipeline was in operation and is now integrated as a new service facility within the Vienna BioCenter Core Facilities. Testing capacity is also provided for humanitarian initiatives of broader public interest such as SARS-CoV2 screening at schools and retirement homes.

[MORE](#)

## VIENNA BIOCENTER CORE FACILITIES

### WE'VE MOVED! WHERE TO FIND US



- PlantS: VBC6 / 283
- NGS: VBC6 / 153, 156
- ProTech: VBC 6 / 171, 172, 175
- PcPheno: VBC6 / 173
- Metabol: VBC 6 / E74, E75

**Access:**

- For external clients via VBC 6 (Portier on weekdays 8-18h)
- For internal clients via IMBA connecting doors

### WE ARE OPEN

	December 2020											January 2021									
	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10
Metabol																					
Mass Spec																					
Pathology																					
AdvMicro																					
EM																					
NGS																					
PlantS																					
VDRC																					
ProTech																					
PcPheno (except animal care)																					
Histo																					
Child Care Center																					

normal service

limited service

no service

## COMPANY NEWS



## THERANOSTIC ASSAY PLATFORM INTRODUCED

Akribes Biomedical presented data on its theranostic assay platform to identify personalized medicine options for chronic wound patients at the European Academy of Dermatology and Venereology Congress (online, Oct. 29 – 31, 2020) and at the European Wound Management Association Meeting (online, Nov. 18 – 19, 2020). One of the presentations also introduced the benefits of a compound with so far unknown potential for chronic wounds.

ARES GENETICS  
WINS AUSTRIAN  
DIGITIZATION AWARD

Ares Genetics has been selected by an expert jury for its artificial intelligence (AI) powered, next generation sequencing (NGS) based molecular antibiotic susceptibility testing (AST) platform **ares-genetics.cloud**. The Austrian Digitization Award is awarded by the Federal Ministry for Digital and Economic Affairs for distinguished digital products and solutions.



MORE

COLLABORATIVE RESEARCH DEMONSTRATES  
POTENTIAL OF NEXT GENERATION  
SEQUENCING

Scientists at Ares Genetics in collaboration with researchers from the Johns Hopkins University School of Medicine have published a peer reviewed study on modifiable risk factors for the emergence of ceftolozane-tazobactam resistance in *P. aeruginosa* in the journal [Clinical Infectious Diseases](#). Findings demonstrate the potential of next generation sequencing (NGS) to investigate mechanisms of resistance by analyzing whole-genome sequencing data from *P. aeruginosa* isolates that developed resistance under treatment with ceftolozane-tazobactam.

MORE

## COMPANY NEWS



### SHIGETEC

#### VACCINE CANDIDATE AGAINST SHIGELLA AND ENTEROTOXIC E. COLI

The publication of preclinical data in [Vaccines](#) describes the generation and characterization of ShigETEC, a live, attenuated vaccine candidate. The data demonstrates that vaccination with ShigETEC results in broad protection against different Shigella species that is attributed to the removal of the immunodominant and serotype determining LPS O-antigen by genetic modification of the vaccine strain, and the ETEC coverage is achieved by expressing non-toxic ETEC toxins by the Shigella vaccine strain. ShigETEC is non-invasive and avirulent, and therefore expected to address the reactogenicity problem experienced in clinical studies with the previous generations of live Shigella vaccines.

[MORE](#)



#### FIRST COMMERCIAL COVID-19 ULTRA-HIGH-THROUGHPUT TEST FOR TRUE PUBLIC HEALTH MASS SCREENING

Lexogen's unique solution can be implemented in any work environment and allows for regular testing of millions of people in 24 hours. This unique mass screening assay is based on industry-leading and widely employed sequencing technology. It is currently the fastest method available on the market, which also significantly reduces the amounts of consumables needed, making it an economically viable solution for a Public Health strategic implementation.

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## COMPANY NEWS

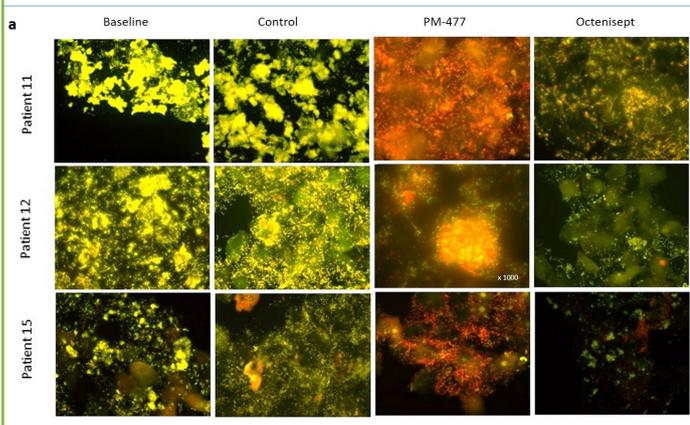


Scientific Advisory Board (f.l.t.r.): Michael Freissmuth, M.D. (Medical University, Vienna), Dirk Jäger, M.D. (National Center for Tumor Diseases, Heidelberg), and Florian Rüker, Ph.D. (BOKU, Vienna).

### SCIENTIFIC ADVISORY BOARD ESTABLISHED

In early September, OncoOne announced the establishment of a Scientific Advisory Board to provide strategic, scientific and preclinical and clinical research guidance for OncoOne's drug development programs based on targeting the oxidized macrophage migration inhibitory factor (oxMIF). "The formation of our Scientific Advisory Board achieves an important goal for our Company, enabling access to critical guidance from esteemed specialists in antibody engineering, preclinical and clinical development," said Randolph Kerschbaumer, CEO of OncoOne.

[MORE](#)



### ENGINEERED PHAGE ENDOLYSIN

#### POTENTIAL SOLUTION FOR RECURRENT BACTERIAL VAGINOSIS

An engineered phage endolysin could offer a highly innovative and precise therapy for recurrent bacterial vaginosis, a disease which affects 100 million women every year and for which no effective treatment option exists. The data published as [preprint](#) show that the novel drug candidate is an innovative solution due to its high efficacy and high precision.

[MORE](#)

## EVENTS

### LUTHOR - unparalleled sensitivity in single cell sequencing

December 10, 2020  
10 AM ET / 9 AM CDT / 7 AM PT  
4 PM CET

LEXOGEN



## WEBINAR BY LEXOGEN

### LUTHER - UNPARALLELED SENSITIVITY IN SINGLE CELL SEQUENCING

Working with single cells or low amounts of RNA? Our new #LUTHOR 3' mRNA-Seq kit enables unprecedented in-depth analysis of the transcriptomic profile for ultra-low input and single cells. Join our free webinar on **December 10**, to find out more.

[MORE](#)

## KEEP ON WATCHING:

### “LONG NIGHT OF RESEARCH DIGITAL” IS STILL ON!

Vienna BioCenter participated in this year's "Long Night of Research Digital". All video posts are still available on the event website **until the end of 2020**. The [online program](#) ranges from interviews with scientists, explanatory videos to interactive formats like quizzes. Keep on watching and tell your friends and family.

LANGE NACHT  
der  
FORSCHUNG  
DIGITAL

registration  
members

12<sup>th</sup> ÖGMBT Annual Meeting



### BIOMOLECULES IN / FOR THE 21<sup>ST</sup> CENTURY

Kick off > Sept. 21-23, 2020  
Life Science Tuesdays > Oct. 2020 - Mar. 2021

registration and abstract submission is open  
[www.oegmbt.at/jahrestagung](http://www.oegmbt.at/jahrestagung)

## ÖGMBT BI-WEEKLY LIFE SCIENCE TUESDAY TILL MARCH 2021

[Register and submit your abstract!](#)

[MORE](#)

## ÖGMBT LIFE SCIENCE CAREER FAIR

- December 10, 2020: "Out of the Box Talk" with Xenia Astanina (Pfizer)
- January 19, 2021: second edition of "Life Beyond Academia"
- Online Career Fair

[MORE](#)

## LIFE SCIENCE CAREER FAIR

BY ÖGMBT

KICK OFF SEPT. 23, 2020  
SEPT. 2020 - MAR. 2021

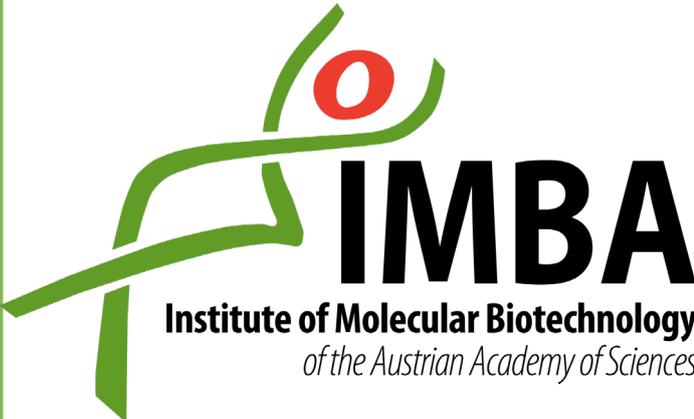
ONLINE AND FREE



## OPEN POSITIONS



ALL JOB OFFERS AT VBC



### SPECIAL JOB ANNOUNCEMENT

IMBA IS OFFERING EXCITING GROUP LEADER POSITIONS IN MOLECULAR LIFE SCIENCE

Submit your applications electronically by **January 10, 2021.**

[MORE](#)

## CAFETERIA

### OPENING HOURS AND COVID REGULATIONS

- **Monday - Friday: 8:30 - 14:30**
- **Weekends & Holidays: 11:30 - 15:00**

Enzi and his motivated team are offering three warm meals, fresh salads, sandwiches, sweets, ice cream, coffee and tea.

**Due to COVID regulation, please observe the following Cafeteria rules:**

- **Registration for Lunch:** It is absolutely necessary to register for your lunch in advance. Enzi sends out an email every morning with a link to the registration form.
- **Bring the Confirmation:** When you have registered online, you will get an automatic confirmation. This confirmation has to be presented at the Cafeteria entrance.
- When a timeslot is fully booked, you are not allowed to come and eat unregistered.
- Stay within your booked time slot and make sure you leave in time.
- It is not allowed to add extra chairs to the tables.

**To insure that the Cafeteria can stay open, all VBC colleagues are appealed to stick to and respect these measurements! Thank you for your cooperation!**

[MORE](#)

## BRIDGE



## COME OVER AND ENJOY THE DELICACIES

- **Monday - Thursday: 14:00 - 18:30**
- **Friday: 14:00 - 18:00**

Ingrid and Lewis will indulge you with a daily changing menu of sandwiches, pastries, burger or pizza. For those in need of a sugar rush, Lewis prepares delicious cheesecakes, shortbread, various muffins, cookies and energy balls (also vegan options available). Fresh fruit juices, fruits, ice cream, chocolate bars and of course coffee and tea are available.

**No time to prepare your own Christmas pastries? Looking for a unique Christmas gift?**

Lewis offers to stock you up for Christmas with a delightful selection of his craftsmanship. Bring your own jar/container/tin which will be filled with heavenly cookies, shortbread, muffins, etc.

INSTAGRAM: LEWIS @ BRITISH BITES

LEWISSULLIVAN@ROCKETMAIL.COM