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## 2021 SEPTEMBER NEWS



**2021-2024**  
IUBMB EDUCATION COMMITTEE

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## CONGRATULATIONS

Recent IUBMB MilliporeSigma Fellows

# CONGRATULATIONS!



## Andrea Bresciani

From Università degli Studi di Milano, Italy has been awarded the  
 MilliporeSigma Virtual Meeting Fellowship  
 to present his research "*Yellow lentils pasta: how extrusion conditions impact on starch organization, protein interactions and cooking quality*" at the Cereals & Grains 21: A Series on Food Evolution

# CONGRATULATIONS!



## Rudrarup Bhattacharjee

From the Adelaide Medical School, The University of Adelaide, Australia has been awarded the  
 MilliporeSigma Virtual Meeting Fellowship  
 to present his research "*Resolving the broad spectrum of neurodevelopmental phenotypes caused by THOC2 gene variants: a key player in the mRNA export pathway*" at the 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists

# CONGRATULATIONS!



## Pei Qin (Sabrina) Ng

From The University of Adelaide, Australia has been awarded the  
 MilliporeSigma Virtual Meeting Fellowship  
 to present her research "*RNA modification 5-methylcytosine (m5C) regulates small RNA biogenesis in Arabidopsis thaliana*" at the 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists



## FEBS-IUBMB-ENABLE 2022 Symposium: a PhD and Postdoc meeting

FEBS-IUBMB-ENABLE are now looking for an academic institution (either a university or a research institution) in Europe with a strong research background in molecular life sciences and an active PhD community to host the November 2022 conference. This event will be organized by a committee of young researchers belonging to the four ENABLE institutions (core institutions, as listed above) plus the selected host institution (associated institution). It will be organized following the standards and structure of the [previous ENABLE events](#), as set out in the [Application Guidelines](#) document. FEBS and IUBMB will fund the event up to a sum of €65,000.

**SEP 15 at 2:00 pm CEST: Application Deadline**

For more information, visit: [bit.ly/3jjW39u](https://bit.ly/3jjW39u)



The IUBMB is involved in a broad range of educational matters. It organizes or sponsors workshops, usually where participants can discuss modern education and related topics. It also distributes

cooperates with the editors of Biochemical Education (Biochemistry and Molecular Biology Education) in identifying timely topics for presentation at symposia and workshops.

The Committee considers [applications](#) from all IUBMB Adhering Bodies and Associated Adhering Bodies. When an activity is to take place at a meeting of one of the Regional Organizations (FAOBMB, FASBMB, FEBS and PABMB) it is often appropriate for the application to be made through that organization.

## Biotechnology and Applied Biochemistry

The International Union of Biochemistry and Molecular Biology (IUBMB) seeks a new [Editor-in-Chief](#) for [Biotechnology and Applied Biochemistry](#). Published since 1979, Biotechnology and Applied Biochemistry is dedicated to the rapid publication of discoveries in the life sciences that impact and advance biotechnology. The Editor will consider papers for publication based on their potential impact on the field, and their compatibility with journal scope. The journal seeks contributions to the fields of synthetic biology, systems biology, metabolic engineering, bioengineering, biomaterials, biosensing, and nano-biotechnology, and how they can be applied to medical and industrial biotechnology.

**Deadline October 31, 2021**

to [Assoc. Prof. James Murphy](#).

## BioFactors

The International Union of Biochemistry and Molecular Biology (IUBMB) seeks a new [Editor-in-Chief](#) for [BioFactors](#), a journal devoted to the rapid publication of discoveries and reviews describing the structures, functions, identification and interactions of macromolecules and metabolites. BioFactors encourages the submission of studies that use biochemistry, biophysics, cell and molecular biology and/or cell signaling approaches.

**Deadline October 31, 2021**

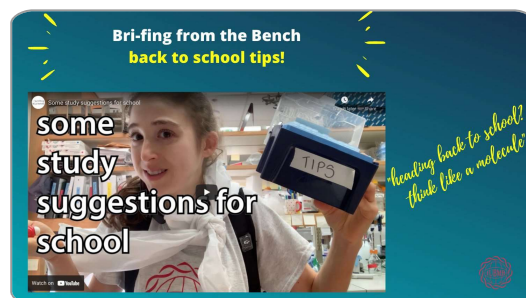
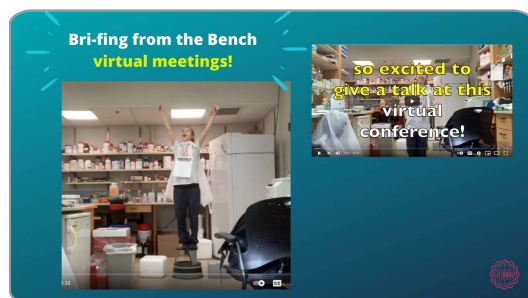
to [Assoc. Prof. James Murphy](#).





Bri has started to do video postings. Here are a few we would like to share.

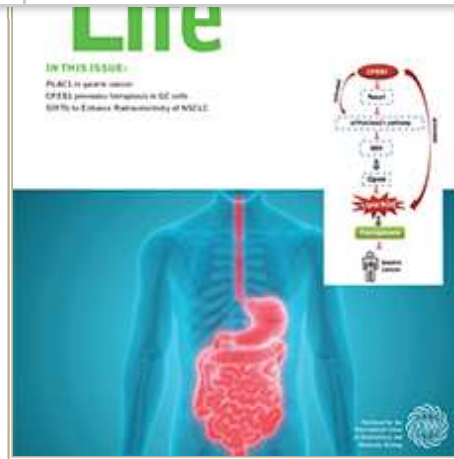
*\* click on photos to play video*



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# IUBMB JOURNALS

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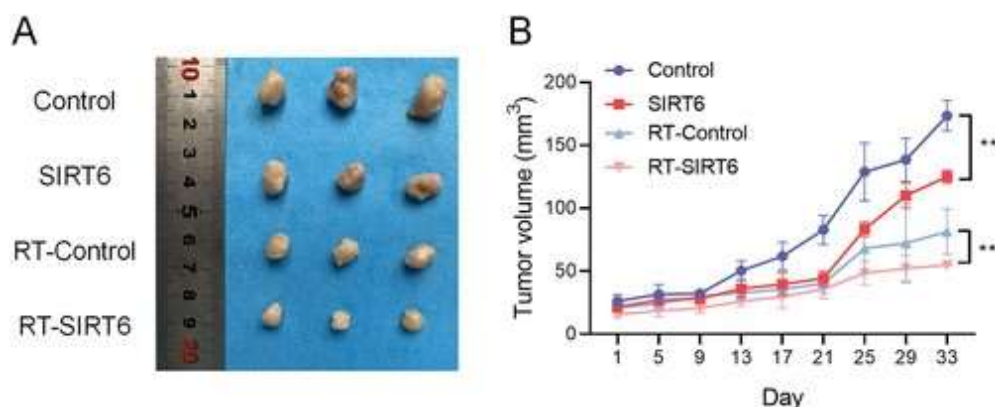
New Issue: Volume 73, Issue 9

## Issue Highlights

- SIRT6 through PI3K/Akt/mTOR Signaling Pathway to Enhance Radiosensitivity of Non-Small Cell Lung Cancer and Inhibit Tumor Progression

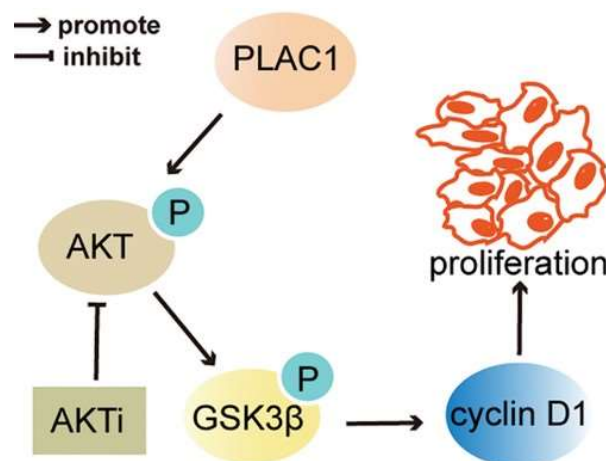
*By Lianggeng Xiong, Binxin Tan, Xiubing Lei, Biao Zhang, Wenting Li, Daimei Liu, Tian Xia*

To explore the effect and mechanism of SIRT6 on radiosensitivity and tumor progression of non-small cell lung cancer (NSCLC), SIRT6 expression was assessed in cell lines of patients with advanced NSCLC before and after radiotherapy. SIRT6 showed a low expression in tumor tissues and cell lines, while SIRT6 was significantly increased in tissues after radiation treatment. Overexpression of SIRT6 downregulated PI3K/Akt/mTOR signaling both before and after radiation, and inhibited proliferation and migration and promoted apoptosis in cell lines, and promoted the growth inhibition effect of radiation on NSCLC xenograft tumors. Cells with high SIRT6 expression after radiotherapy had lower proliferation and migration, and increased apoptosis. Therefore, SIRT6 inhibits the development of NSCLC tumors and promotes radiosensitivity by downregulating the activity of PI3K/Akt/mTOR signaling pathway.



By Dongyang Liu, Ke Shi, Mingshi Fu, Feng Chen

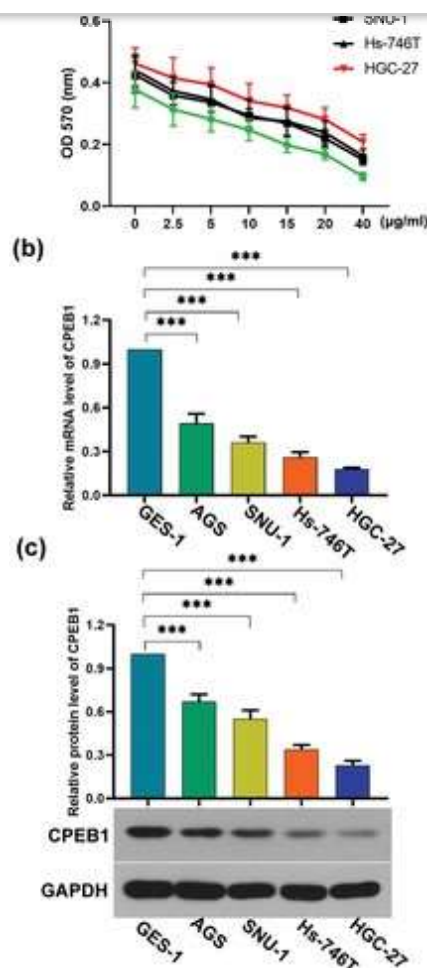
PLAC1 is highly expressed in gastric cancer, it is associated with poor prognosis and can promote gastric cancer cell proliferation through the AKT/GSK-3 $\beta$ /cyclin D1 signaling pathway. Moreover, AKT inhibitor attenuates the effect of PLAC1. Therefore, PLAC1 is a potential molecular marker for gastric cancer diagnosis, prognosis, and treatment.



- [CPEB1 enhances erastin-induced ferroptosis in gastric cancer cells by suppressing twist1 expression](#)

By Jing Wang, Tao Wang, Yang Zhang, Jiaqi Liu, Jie Song, Yanlong Han, Lihong Wang, Shuang Yang, Lili Zhu, Rui Geng, Weimin Li and Xiaoguang Yu

The induction of ferroptosis is considered a new strategy for cancer treatment. Low expression of cytoplasmic polyadenylation element binding protein 1 (CPEB1) has been linked to enhanced metastasis and angiogenesis of gastric cancer (GC). Gastric cancer cells with either overexpressed or silenced CPEB1 expression were treated with erastin, a classic ferroptosis inducer, which decreased the viability of four GC cell lines. CPEB1 overexpression reduced expression of twist1, and re-expression of twist1 in the presence of erastin impaired the effects of CPEB1 overexpression. In vivo, CPEB1 overexpression enhanced the growth-inhibition by erastin on GC xenografted tumors, further demonstrating that CPEB1 facilitates erastin-induced ferroptosis by inhibiting twist1.



## SPECIAL ISSUE CALL FOR PAPERS

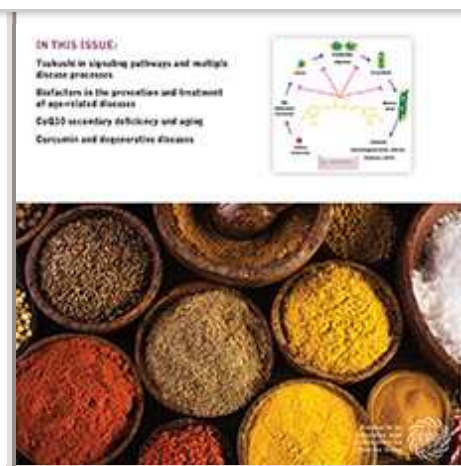
See the full list of Calls for Papers [here](#)

## NEW VIRTUAL ISSUES

See all the new IUBMB Life Virtual issues [here](#)

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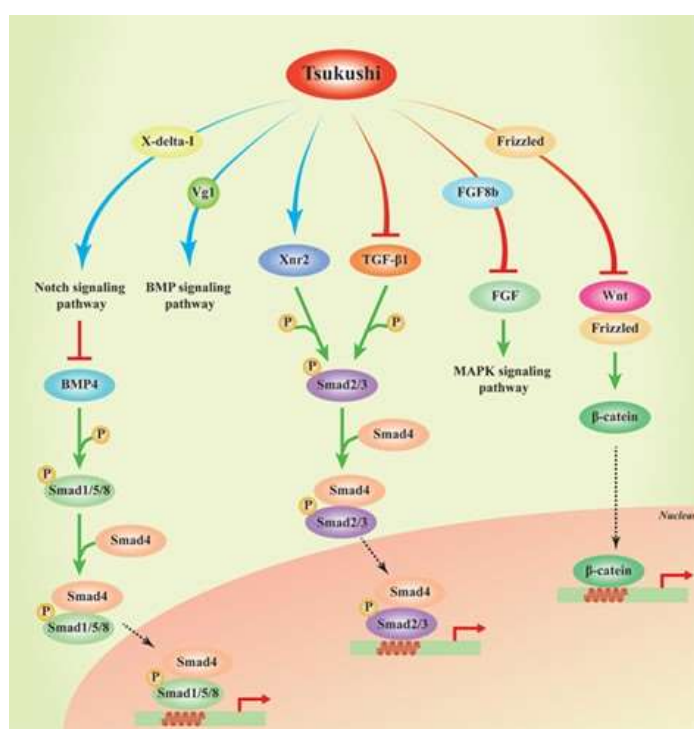
## New Issue: Volume 47, Issue 4

### Issue Highlights

- [Novel roles of Tsukushi in signaling pathways and multiple disease processes](#)

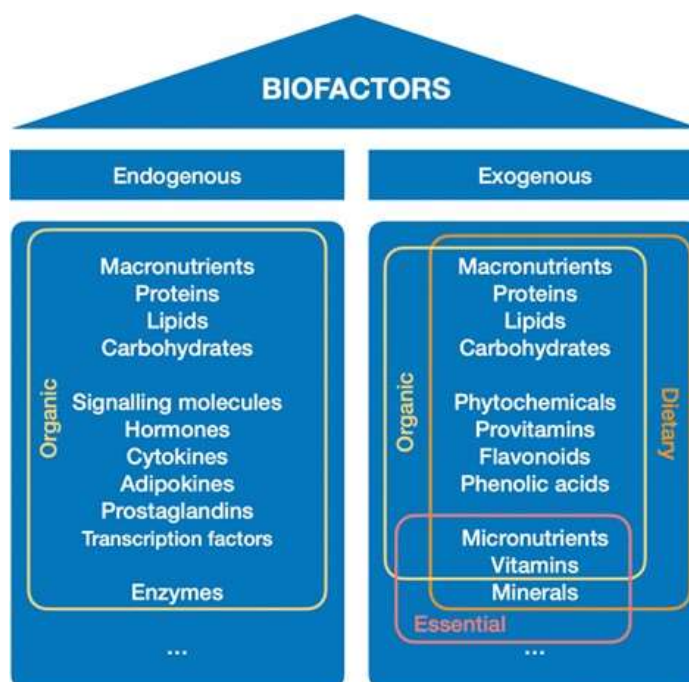
By Xia Deng, Yanyan Li, Chang Guo, Zhicong Zhao and Guoyue Yuan

Tsukushi (TSK), a newly discovered hepatokine, belongs to the leucine rich proteoglycans (SLRPs) family. Previous studies have shown that TSK, as an extracellular signal mediator, can regulate a variety of signal pathways, including BMP, Wnt, TGF- $\beta$ , FGF, and MAPK. Recently, more and more studies have found that TSK is involved in many diseases, such as obesity, diabetes, nonalcoholic fatty liver disease and tumor. This study summarizes novel roles of TSK in signaling pathways and multiple disease processes, expands people's understanding of the role and function of TSK gene, and provides a theoretical basis for further research.



By Jan Frank, Klaus Kisters, Ovidiu Alin Stirban, Rima Obeid, Stefan Lorkowski, Maria Wallert, Sarah Egert, Maren C. Podszun, Gunter P. Eckert, Jacqueline A. Pettersen, Sascha Venturelli, Hans-Georg Classen and Jana Golombek

The dietary intake of essential and nonessential biofactors is a major determinant of human health, the age-related diseases and mortality in the older population. These biofactors can be a cost-effective strategy to prevent or even treat age-related diseases. Here we review examples including omega-3 fatty acids and dietary fiber for the prevention of CVD, vitamin E for the treatment of nonalcoholic steatohepatitis, vitamin D for the prevention of neurodegenerative diseases, thiamine and  $\alpha$ -lipoic acid for the treatment of diabetic neuropathy, and the role of folate in cancer epigenetics. Furthermore, we propose here a definition of “biofactors” that will enable a harmonization and consistent use of the term in the scientific literature.

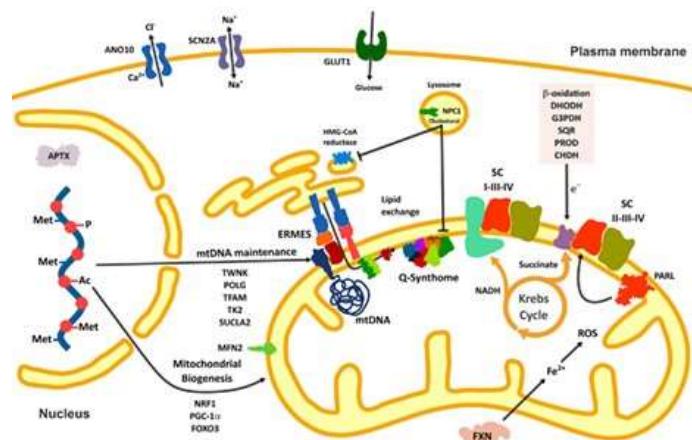


- [Secondary CoQ10 deficiency, bioenergetics unbalance in disease and aging](#)

By Plácido Navas, María V. Cascajo, María Alcázar-Fabra, Juan D. Hernández-Camacho, Ana Sánchez-Cuesta, Ana Belén Cortés Rodríguez, Manuel Ballesteros-Simarro, Antonio Arroyo-Luque, Juan Carlos Rodríguez-Aguilera, Daniel J. M. Fernández-Ayala, Gloria Brea-Calvo, Guillermo López-Lluch and Carlos Santos-Ocaña

Coenzyme Q10 (CoQ10) deficiency is a rare disease characterized by a decreased accumulation of CoQ10 in cell membranes and is the only mitochondrial disease with a successful therapy available, CoQ10 supplementation. Defects in synthesis caused by mutations in COQ generate primary CoQ10 deficiency. Mutations in genes that are not directly related to the synthesis

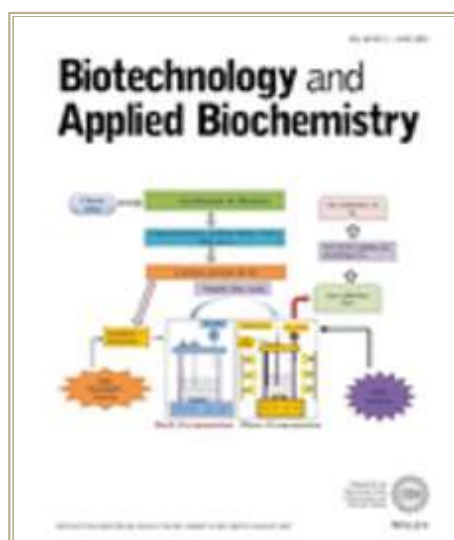
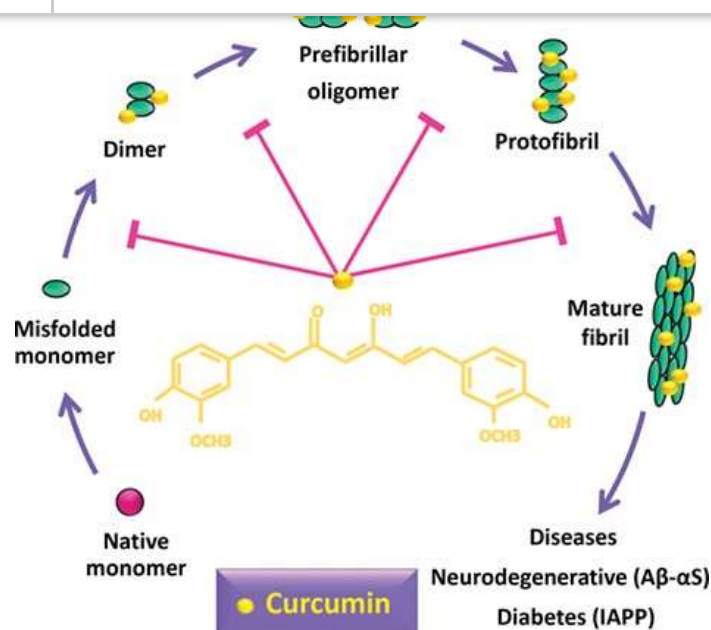
deficiency for clinical activity. The analysis covers the fundamental features of CoQ10 deficiency as well in-depth analysis of CoQ10 secondary deficiency to consider its origins, introduce a new way of classification, and include aging as a form of secondary deficiency.



- Curcumin: A small molecule with big functionality against amyloid aggregation in neurodegenerative diseases and type 2 diabetes

*By Shabnam Radbakhsh, George E. Barreto, Abigail R. Bland and Amirhossein Sahebkar*

Amyloidosis refers to the accumulation of insoluble proteins, called amyloids, in different tissues and organs, and is the pathological hallmark in several disorders. Curcumin is the active ingredient of turmeric with anti-amyloid effects that can interfere with self-assembly processes and reduce amyloid aggregation. The prevention of toxic oligomer formation, disruption of fibrillar aggregation, and suppression of expression of enzymes involved in amyloid generation such as BACE-1 and  $\gamma$ -secretase are the possible mechanisms by which curcumin attenuates amyloid-induced pathological features. This small molecule and its derivatives have also been approved for clinical trials conducted on amyloid diseases such as neurodegeneration and type 2 diabetes.



New Issue: [Volume 68, Issue 3](#)

### Issue Highlights

- [DNA–RNA complementation on silicon wafer for thyroid cancer determination](#)

By *Subash C.B. Gopinath, Shijin Xuan*

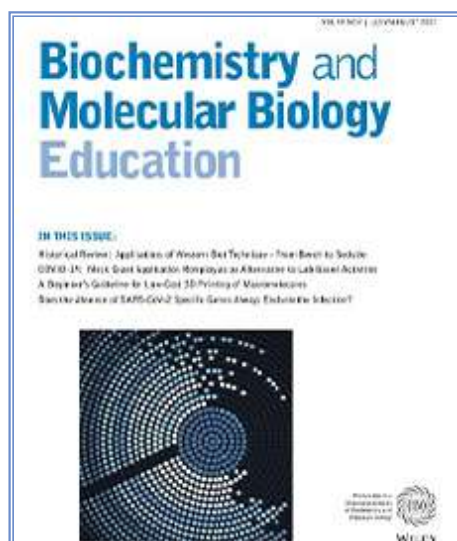
One of the current issues with thyroid tumor is early diagnosis as it makes the higher possibility of curing. This research was focused to detect and quantify the level of specific target sequence complementation of miR-222 with capture DNA sequence on interdigitated electrode (IDE) sensor. The aluminum electrode with the gap and finger sizes of 10  $\mu\text{m}$  was fabricated on silicon wafer, further the surface was amine-functionalized for accommodating carboxylated-DNA probe.

similar level. Current responses were higher by increasing the target RNA sequence concentrations. Control experiments with mismatched/noncomplementary sequences were failed to complement the capture DNA sequence immobilized on IDE, indicating the specific target validation. This research helps diagnosing and identifying the progression with thyroid tumor and miRNA being a potential “marker” in atypia diagnosis.

- [Downregulation of gap junctional intercellular communication and connexin 43 expression by bisphenol A in human granulosa cells](#)

*By Ta-Chin Lin, Kai-Hung Wang, Kuo-Hsiang Chuang, An-Pei Kao, Tsung-Cheng Kuo*

Gap junctional intercellular communication (GJIC) is the transfer of ions, metabolites, and second messengers between neighboring cells through intercellular junctions. Connexin 43 (Cx43) was found to be the type of gap junction protein responsible for human granulosa cells (GCs) and oocyte communication, which is required for folliculogenesis and oocyte maturation. Bisphenol A (BPA), an estrogenic-like endocrine-disrupting chemical, is one of the most widely produced chemicals around the world. There are reports that the chemical might cause endometrial tumorigenesis and several female reproductive disorders. This study demonstrated that cell culture medium, containing antioxidants (N-acetyl-L-cysteine and L-ascorbic acid-2-phosphate), was able to enhance the survival and self-renewal of GCs. In addition, we found that BPA at environmentally relevant concentration ( $10^{-7}$  M) reduced Cx43 expression and GJIC in GCs through estrogen receptor and mitogen-activated protein kinase pathways. The results of this study not only reveal the reproductive toxicity of BPA but also provide possible mechanisms by which BPA inhibited GJIC in GCs.





## Issue Highlights

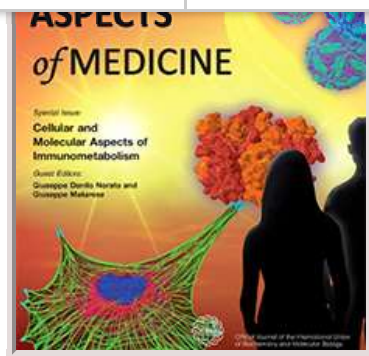
- [Mock grant application roleplay as an alternative to lab-based activities in molecular biology](#)

Many universities resort to online teaching due to COVID-19 pandemic. It is a challenging endeavor, especially in Molecular Biology courses that require lab access. Mock grant application roleplay is one alternative to lab-based activities. Students are engaged in three aspects: (i) targeted literature review, (ii) research proposal writing and (iii) 5-min project pitching. The design of this module is flexible and, other lab-based courses can adopt it. This module encourages undergraduate students to explore the lab techniques they learnt and concisely present their research proposal.

- [A guided-inquiry investigation of genetic variants using Oxford nanopore sequencing for an undergraduate molecular biology laboratory course](#)

Next Generation Sequencing (NGS) has become an important tool in the biological sciences and has a growing number of applications across medical fields. Currently, few undergraduate programs provide training in the design and implementation of NGS applications. Here, we describe an inquiry-based laboratory exercise for a college-level molecular biology laboratory course that uses real-time MinION deep sequencing and bioinformatics to investigate characteristic genetic variants found in cancer cell-lines. The overall goal for students was to identify non-small cell lung cancer (NSCLC) cell-lines based on their unique genomic profiles. The units described in this laboratory highlight core principles in multiplex PCR primer design, real-time deep sequencing, and bioinformatics analysis for genetic variants. We found that the MinION device is an appropriate, feasible tool that provides a comprehensive, hands-on NGS experience for undergraduates. Student evaluations demonstrated increased confidence in using molecular techniques and enhanced understanding of NGS concepts. Overall, this exercise provides a pedagogical tool for incorporating NGS approaches in the teaching laboratory as way of enhancing students' comprehension of genomic sequence analysis. Further, this NGS lab module can easily be added to a variety of lab-based courses to help undergraduate students learn current DNA sequencing methods with limited effort and cost.

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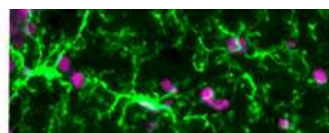


## UPCOMING MEETINGS

EMBO  
Workshop

### Microglia 2021

28 – 29 October 2021 **Virtual**



This 2-day EMBO workshop is a unique career opportunity for early-stage researchers to present their work and connect with peers.

**Sep 2:** Abstract Deadline | **Sep 30:** Registration Deadline | **Oct 28-29:** Event  
[online poster](#) | [meeting details](#)

September 6<sup>th</sup>, 2021. Live streaming. 16:30 to 20:00h Central European Time

### Magellan - Elcano Conferences Second edition

#### Nuclear organization

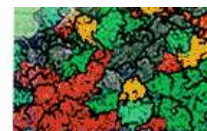
[View](#)

**Sep 6:** [Event](#) | [Program](#)

EMBL Conference

### Bringing Molecular Structure to Life: 50 Years of the PDB

20 – 22 October 2021 **Virtual**



The Protein Data Bank (PDB) turns 50! Join us to celebrate the advances in structural biology and bioinformatics and peer into the future prospects for these fields.

[Oct 20-22: Event](#) | [online poster](#) | [meeting details](#)



**Sep 10:** [Abstract Deadline](#) | **Oct 16:** [Travel Fellowships Deadline](#)

**Nov 12:** [Early Registration](#) | [meeting details](#)



There is still so much to discover about non-coding RNAs. Learn more at the symposium.

**Sep 13:** [Registration Deadline](#) | **Oct 13-15:** [Event](#) | [online poster](#) | [meeting details](#)



We would like to announce a webinar series on “Innovation in Undergraduate Teaching of Life Sciences”. This webinar series replaces and complements the “1st Swiss Symposium on Innovation in Undergraduate Teaching of Life Sciences” (cancelled for now because of the pandemic).

Guest Speaker: **Jean-Pierre Kraehenbuhl** (Health Sciences eTraining (HSeT) Foundation; Épalinges, CH) with video clips from **Meera Manra** (University of Mauritius), et **Hervé Bourhy** (Institut Pasteur, Paris, France)

***COLT: a new weapon to disseminate knowledge***

REGISTRATION IS FREE, for LS2 members and non-members, and for the whole Seminar Series. Only registered participants will receive the zoom link of the webinar.



EMBL Conference

**Cancer Genomics**

22 – 24 November 2021

Virtual



Are you interested in the latest advances in cancer genomics? Join us for an in-depth discussion about the recent developments in the field and their clinical impact.

**Sep 20:** Abstract Deadline | **Oct 25:** Registration | **Nov 22-24:** Event  
[online poster](#) | [meeting details](#)

Abstract deadline  
22 September 2021

Registration deadline  
20 October 2021



We'll focus on how metabolites and metabolic networks impact gene regulation, on recently discovered roles of metabolites in disease and how this opens novel therapeutic avenues.

**Sep 22:** Abstract Deadline | **Oct 20:** Registration Deadline | **Nov 17-20:** Event  
[meeting details](#)



IUBMB Focused Meeting / FEBS Workshop  
Crosstalk between Nucleus and Mitochondria in Human Disease  
22-25 March 2022 | Seville, Spain

Register  
Login



Due to the coronavirus pandemic and after careful consideration, the **IUBMB Focused Meeting / FEBS Workshop** on “Crosstalk between Nucleus and Mitochondria in Human Disease” (*CrossMitoNus*) in Seville, Spain has been postponed to **22–25 March 2022**. The event will take place at the Research Scientific Centre Isla de la Cartuja ([cicCartuja](#)). We know this is a difficult time for you all, but we are happily looking forward to get to know each other next spring, learn and present our work. Namely, we are pleased to inform you that most of our invited speakers and contributors have already confirmed their participation in *CrossMitoNus* next year so we can look forward to a similar excellent [scientific program](#).

**Sep 30:** [Abstract Deadline](#) | **Oct 31:** [Registration Deadline](#) | [meeting details](#)



The Education Special Interest Group (SIG) of the Australian Society for Biochemistry and Molecular Biology (ASBMB) will host a half-day symposium titled 'Sharing Practice: A Focus on Assessment and Academic Integrity'.

**Sep 24:** [Registration Deadline](#) | **Sep 28:** [Event](#) | [online poster](#) | [meeting details](#)





**22-25 NOVEMBER 2021**

MOLECULES | LIFE | DIVERSITY

16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists  
Christchurch, New Zealand & Online

**Virtual Conference Registration**

- All Congress presentations available on-demand
- Live Q&A with plenary speakers
- Certificate of participation
- Educator discount: contact us for bulk registration of your entire class
- **Distinguished speakers in:**

Biochemistry

Molecular Biology

Cell Biology

Microbiology

Plant Biology

**OVER 550 ABSTRACTS SUBMITTED**  
from 30 different countries!

More details: [FAOBMB2021.ORG](http://FAOBMB2021.ORG)






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**EARLY BIRD CLOSING  
SAVE BY REGISTERING NOW  
FRIDAY 08 OCTOBER**

IUBMB Virtual Meeting fellowships available  
view [iubmb.org](http://iubmb.org) for details



**22-25 NOVEMBER 2021**

MOLECULES | LIFE | DIVERSITY



**Are you a student or postdoc member of an IUBMB-affiliated Biochemistry society?**

EXCITED TO EXPERIENCE NOVEMBER'S FAOBMB CONGRESS?  
BUT...UNABLE TO TRAVEL TO NEW ZEALAND?

Have your online Congress registration paid by an IUBMB MilliporeSigma  
**Virtual Meeting Fellowship!** View [iubmb.org](http://iubmb.org) for details

[FAOBMB2021.ORG](http://FAOBMB2021.ORG)

\*\*\* Interested in attending a virtual meeting? Now you can by applying for the *IUBMB MilliporeSigma Virtual Meeting Fellowships*

# ANNOUNCEMENTS

## Exploring the secrets of life

Europe-wide, global impact, infinite curiosity. The European Molecular Biology Laboratory is a powerhouse of biological expertise.

With 27 member states, EMBL currently employs 1800 people with more than 80 independent research groups covering the spectrum of molecular biology at six sites in [Barcelona](#), [Grenoble](#), [Hamburg](#), [Heidelberg](#), [EMBL-EBI Hinxton](#) and [Rome](#).

IUBMB has partnered with the European Molecular Biology Laboratory ([EMBL](#)) as a media partner. EMBL is Europe's leading life sciences laboratory, conduct world-class excellent biological research, provide training for students and scientists, and provide state-of-the-art technologies for a wide range of scientific and experimental services.

All the virtual courses provide hands on training and live interaction with world leading experts. A number of fee waivers are also provided (further information is available on Practical Information pages of respective courses).

## Research Development Fellowships 2021/22

Our Research Development Fellowship (RDF) Programme is designed to support African researchers who are working on important challenges for human health in Africa. Apply before the closing date on 23 September 2021.

## Research Development Fellowships 2021/22

Our Research Development Fellowship (RDF) Programme is designed to support African researchers who are working on important challenges for human health in Africa.

### Programme Overview

challenges for human health to develop their skills as a researcher.

**What we offer:** A three to nine-month placement at a leading research institution in Europe or Africa, with additional support at your home institution before and after the placement, up to a maximum of £40,000.

**Who is eligible:** Research active post-doctoral scientists and clinicians who are nationals of and employed in Sub-Saharan Africa who were awarded their doctorate within the last six years; and clinicians without a doctorate but who have a Masters degree or a specialist clinical qualification and between three and seven years active research experience (see detailed eligibility criteria).

**How to apply:** After reading the [information](#), download the [Application Form](#) and [Information for Applicants](#) and email to [Fellowships.AREF@aref-africa.org.uk](mailto:Fellowships.AREF@aref-africa.org.uk) before the **closing date 12:00 GMT 23 SEPTEMBER 2021**.



**EMPOWER Fellowships – Guidelines for Application**

The United Nations Office for South-South Cooperation (UNOSSC) under its Youth4South initiative and the ICGEB have partnered to offer early-career female scientists from the Global South, aged 45 or under, exchange visits of 6-months at the ICGEB laboratories in New Delhi (India) and Cape Town (South Africa) or at other institutions based in an eligible ICGEB Member State\*, to perform research work on biotechnology and related fields, including Health (Infectious Diseases and Non-Communicable Diseases), Sustainable and Effective Agriculture, Industrial Biotechnology and Renewable Energy.

Closing Date for Applications: 30 SEPTEMBER 2021

## EMPOWER Fellowships – Guidelines for Application

The United Nations Office for South-South Cooperation (UNOSSC) under its Youth4South initiative and the ICGEB have partnered to offer early-career female scientists from the Global South, aged 45 or under, exchange visits of 6-months at the ICGEB laboratories in New Delhi (India) and Cape Town (South Africa) or at other institutions based in an eligible ICGEB Member State\*, to perform research work on biotechnology and related fields, including Health (Infectious Diseases and Non-Communicable Diseases), Sustainable and Effective Agriculture, Industrial Biotechnology and Renewable Energy.

[Guidelines for Applications](#) | **Closing Date for Applications: 30 SEPTEMBER 2021**



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