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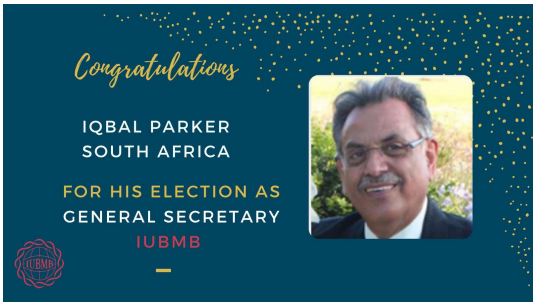
2021 AUGUST NEWS




LOREDANO POLLEGIONI
ITALY
FOR HIS ELECTION AS
TREASURER
IUBMB


YANG MOOI LIM
MALAYSIA
FOR HER ELECTION AS
MEMBER FOR
EDUCATION AND TRAINING
IUBMB


Welcome
JAMES MURPHY
AUSTRALIA
CHAIR
PUBLICATIONS COMMITTEE
IUBMB


Welcome
DAN DRIES
USA
CHAIR
FELLOWSHIP COMMITTEE
IUBMB


Congratulations
FOR ELECTION TO THE
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Turkey
Hannu Koistinen
Finland
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2021-2024
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Stanley Mukanganyama
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BODY MEMBERS

Warm welcome to the Society of Biological Sciences in Cyprus, approved as the newest member of the IUBMB family at the 25th Ordinary General Assembly on July 15.

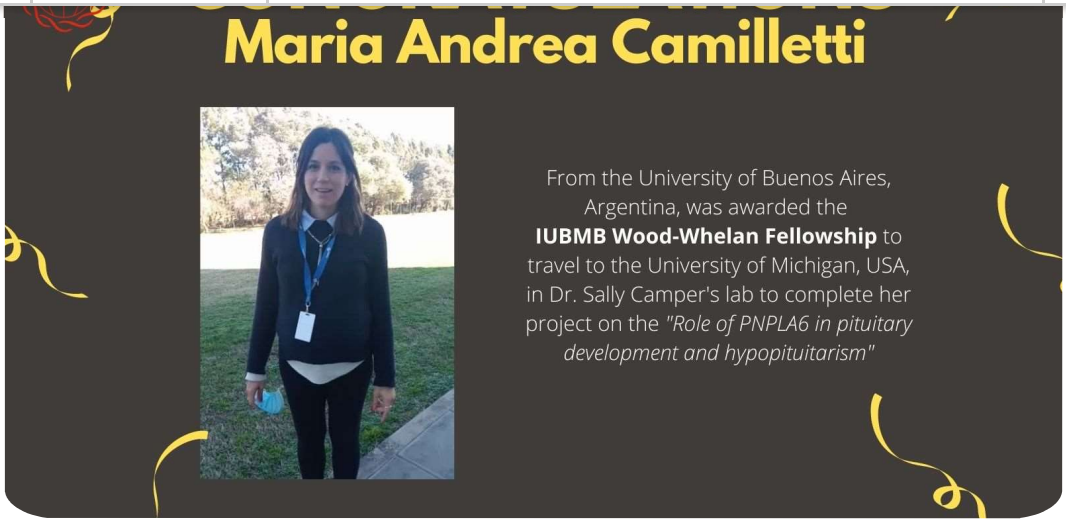
Another warm welcome to the Iraqi Society for Molecular Biology and Genetics, approved as the newest member of the IUBMB family at the 25th Ordinary General Assembly on July 15.

CONGRATULATIONS

Congratulations to Yalda Rahbar Saadat, whose paper on *"Glucocorticoid receptors and their upstream epigenetic regulators in steroid-resistant nephrotic syndrome in adults"* was selected for the Wiley-Biofactors Young Investigator Award. First published on 08 October 2020

We are delighted to announce that Professor Joan Guinovart from IRB Barcelona is to receive the IUBMB Distinguished Service Award for his dedication, commitment, and leadership over the past two decades, including as Treasurer and Elect-Current-Past President.

** click on photo to play video*



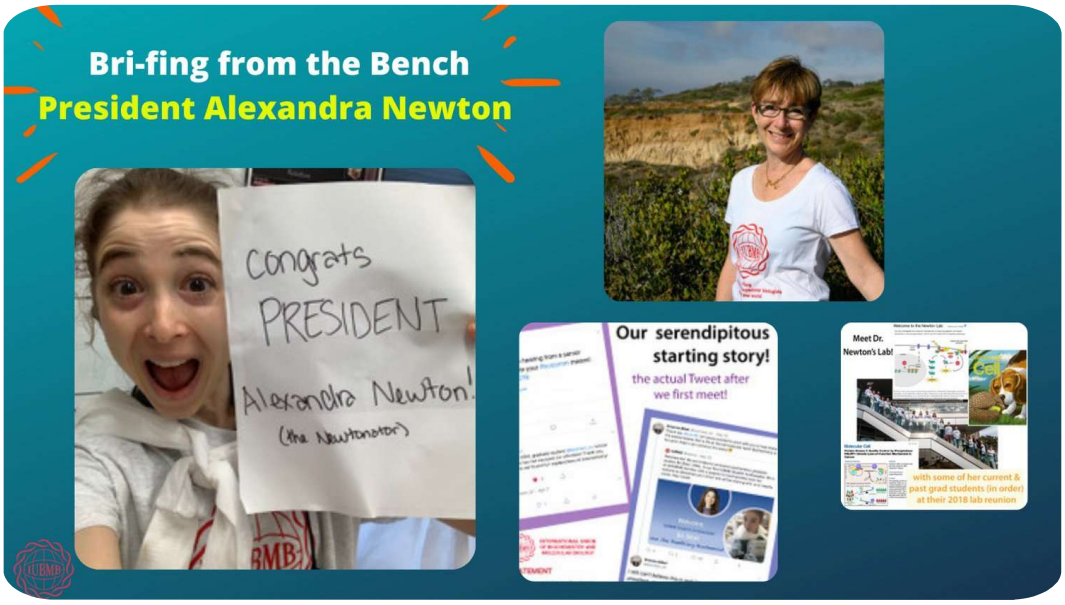
** click on photo to play video*

UPCOMING IUBMB DEADLINE

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

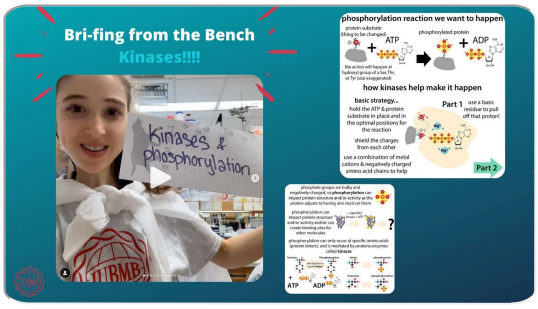
FEBS-IUBMB-ENABLE are now looking for an academic institution (either a university or a research institution) in Europe with a strong research background in molecular life sciences and an active PhD community to host the November 2022 conference. This event will be organized by a committee of young researchers 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.

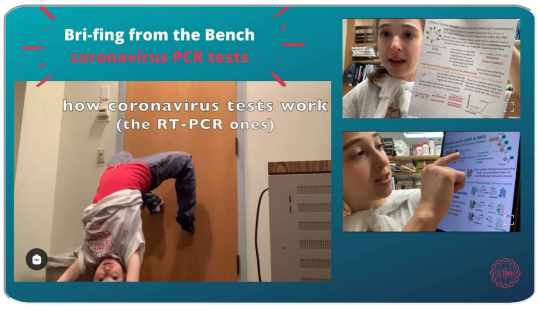
SEP 15 at 2:00 pm CEST: Application Deadline
For more information, visit: https://bit.ly/3zuZ3Vr



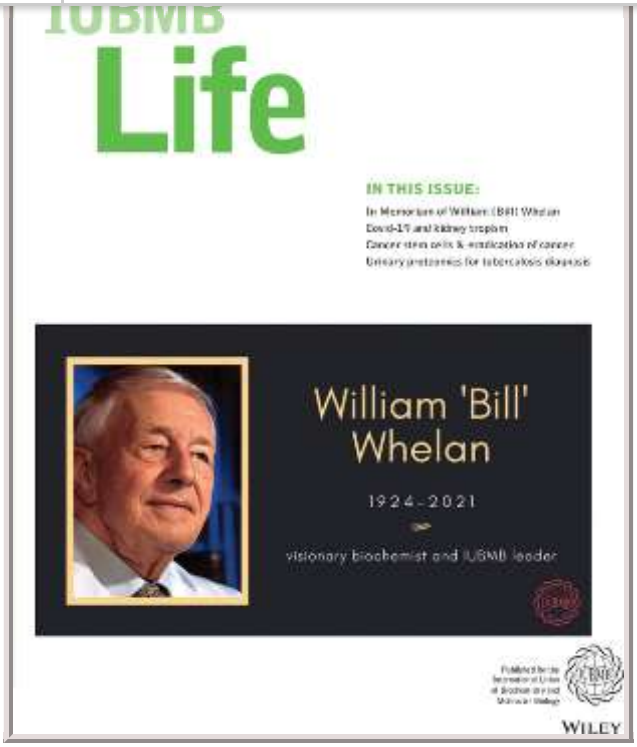
Bri has started to do video postings. Here are a few we would like to share.

** click on photos to play video*





IUBMB JOURNALS



New Issue: Volume 73, Issue 8

Issue Highlights

- William "Bill" Joseph Whelan, D.Sc., FRS, November 14, 1924 to June 5, 2021

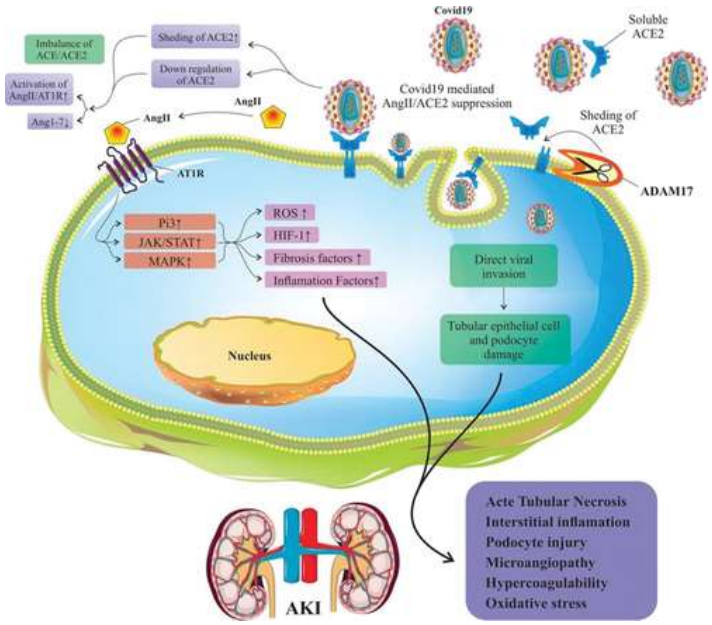
  By Angelo Azzi, Sandra Black, Sylvia Daunert * First published: 24 June 2021

- The lethal internal face of the coronaviruses: Kidney tropism of the SARS, MERS, and COVID19 viruses

  By Roza Motavalli, Walid Kamal Abdelbasset, Heshu Sulaiman Rahman, Muhammad Harun Achmad, Nataliya Klunko Sergeevna, Angelina Olegovna Zekiy, Ali Adili, Farhad Motavalli Khiavi, Faroogh, Marofi, Mehdi Yousefi, Shadi Ghoreishizadeh, Navid Shomali, Jalal Etemadi, Mostafa Jarahian

  SARS-CoV causes proteinuria and renal impairment or failure. The SARS-CoV was identified in the distal convoluted tubules of the kidney of infected patients. Also, renal dysfunction was observed in numerous cases of MERS-CoV infection. And recently, during the 2019-nCoV pandemic, it was found that the novel coronavirus not only induces acute respiratory distress syndrome (ARDS) but also can induce damages in various organs including the liver, heart, and kidney. The kidney tissue and its cells are targeted massively by the coronaviruses due to the abundant presence of ACE2 and Dpp4 receptors on kidney cells. These receptors are characterized as the main route of

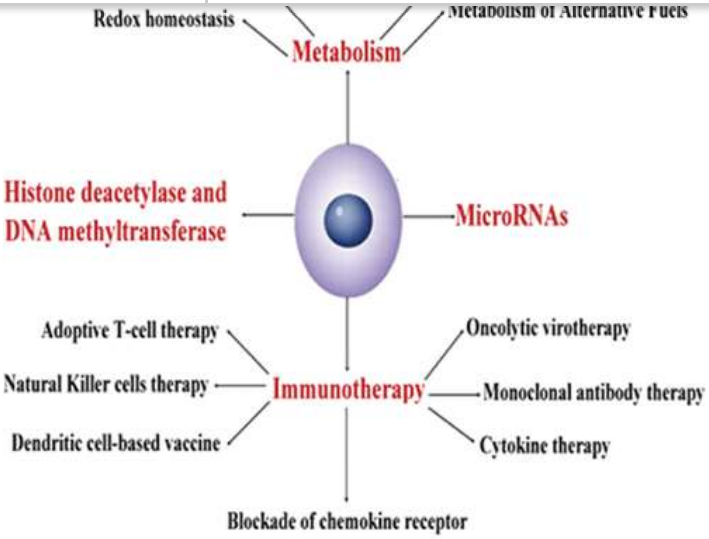
attention should be paid to the pathology of coronaviruses in the kidney.



- Selectively targeting cancer stem cells: Current and novel therapeutic strategies and approaches in the effective eradication of cancer

  By Seyed-Alireza Esmaeili, Shamim Sahranavard, Astireh Salehi, Vahid Bagheri

  Cancer stem cells (CSCs) as a small subset of neoplastic cells with tumor-initiating capability, self-renewal capacity, and pluripotency due to their pivotal role in tumor initiation, growth, progression, maintenance, invasion, metastasis, and relapse, as well as resistance to anticancer drugs are very appealing targets for cancer therapies. Therefore, targeting CSCs through their metabolism and using immunotherapy and microRNAs (miRNAs) besides classical chemo- and radiotherapy may exert better therapeutic effects in the effective eradication of cancer.



TARGETING CANCER STEM CELLS

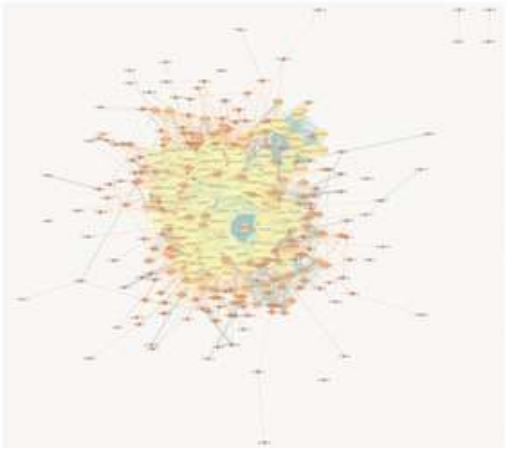
- Urinary proteomic analysis to identify a potential protein biomarker panel for the diagnosis of tuberculosis

By Liguo Liu, Jiaheng Deng, Qianting Yang, Candong Wei, Bo Liu, Haoran Zhang, Henan Xin, Shouguo Pan, Zisen Liu, Dakuan Wang, Yu Pang, Xinchun Chen, Lei Gao, Jianhua Zheng, Rongmei Liu, Qi Jin

Rapid and accurate diagnosis of tuberculosis (TB) is one of the most direct means to reduce the incidence of TB. Here urinary proteomic profiling of TB patients was performed (Figure), and a clinically-useful disease marker panel was established and validated. A three-protein combination out of the five-protein panel (namely P22352, Q9P121, P15151, Q13291, and Q8NDA2) exhibited sensitivity rate of 82.7% in the diagnosis of TB and specificity rate of 92.3 % for the diagnosis of TB from the latent TB category. The results provided preliminary evidence that this biomarker panel could probably be a novel TB diagnostic biomarker in clinical application.

(A) non-TB control (HC) group; (B) tuberculosis (TB) patients.

B



SPECIAL ISSUE CALL FOR PAPERS

See the full list of Calls for Papers *here*

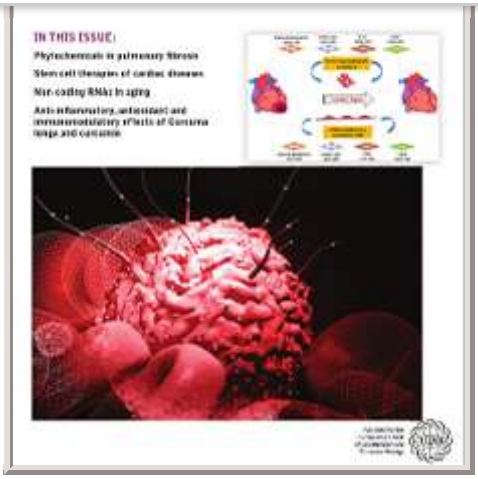
NEW VIRTUAL ISSUES

See all the new IUBMB Life Virtual issues *here*

We are pleased to announce that your contributions have helped IUBMB Life achieve an **increased Impact Factor in 2020 of 3.885 from 3.244 in 2019**. This means that the journal is now ranked 121 out of 195 in the category of Cell Biology and 147 out of 297 in the category of Biochemistry & Molecular Biology, and has a 5-year Impact Factor of 4.022.

Thank you for contributing to this success. Share your paper with your network and spread the word about your achievement!

Dr. Stathis Gonos, Editor-in-Chief, *IUBMB Life*



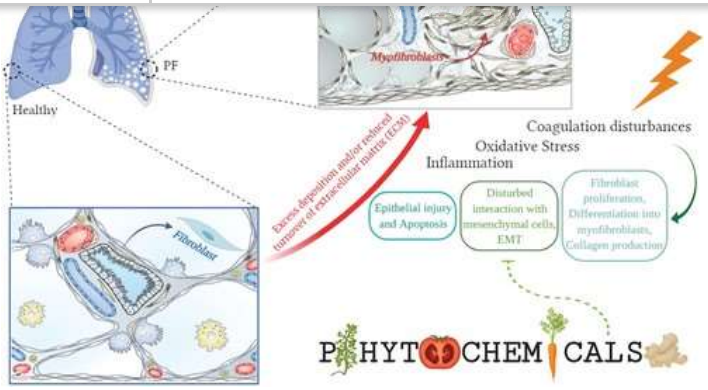
New Special Issue: Volume 47, Issue 3

Issue Highlights

- Pulmonary fibrosis: Therapeutic and mechanistic insights into the role of phytochemicals

By Seyede Atefe Hosseini, Fatemeh Zahedipour, Thozhukat Sathyapalan, Tannaz Jamialahmadi and Amirhossein Sahebkar

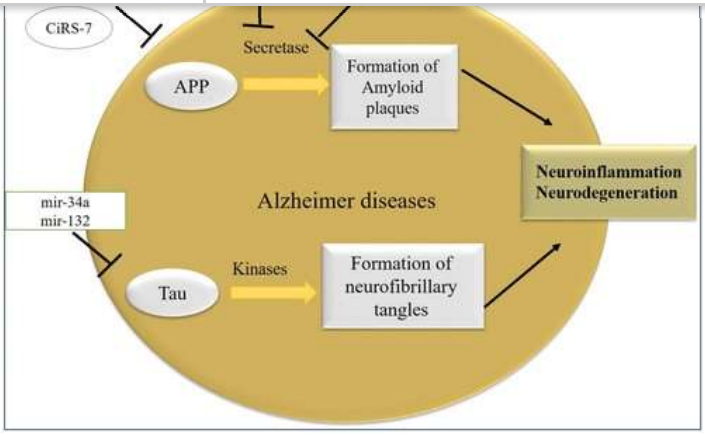
Pulmonary fibrosis (PF) is the devastating consequence of various inflammatory diseases of the lung. PF leads to a reduction of lung function, respiratory failure, and death. Several molecular pathways are involved in PF, such as inflammatory cytokines including tumor necrosis factor α (TNFα), tumor necrosis factor β1 (TNFβ1), interleukin 6 (IL-6), and interleukin 4 (IL-4), reactive oxygen species, matrix metalloproteases, and transforming growth factor-beta (TGF-β). Targeting these processes involved in the progression of PF is essential for the treatment of this disease. Natural products, including plant extracts and active compound that directly target the processes involved in PF, could be suitable therapeutic options with less adverse effects. In the present study, we reviewed the protective effects and the therapeutic role of various bioactive compounds from plants in PF management.



- The role of exosomal non-coding RNAs in aging-related diseases

By Sanam Dolati, Seyed Kazem Shakouri, Neda Dolatkhah, Mehdi Yousefi, Farhad Jadidi-Niaragh and Sarvin Sanaie

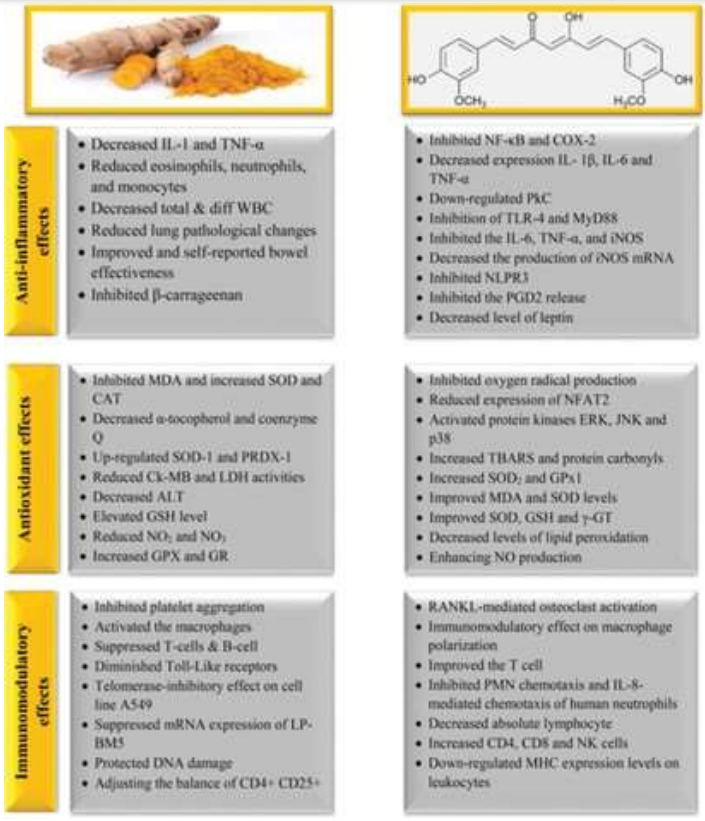
Aging is a biological process caused by the accumulation of senescent cells with a permanent proliferative arrest. To the influence of aging on human life expectancy, there is essential for new biomarkers which possibly will assistance in recognizing age-associated pathologies. Exosomes, which are cell-secreted nanovesicles, make available a new biomarker detection and therapeutic approach for the transfer of different molecules with high capacity. Recently, non-coding RNAs (ncRNA) which are contained in exosomes have developed as important molecules regulating the complexity of aging and relevant human diseases. The discovery of ncRNA provided perceptions into an innovative regulatory platform that could interfere with cellular senescence. The non-coding transcriptome includes a different of RNA species, spanning from short ncRNAs (<200 nucleotides) to long ncRNAs, that are >200 bp long. Upgraded evidence displays that targeting ncRNAs possibly will influence senescence pathways. In this article, we will address ncRNAs that participated in age-related and cellular senescence diseases. Growing conception of ncRNAs in the aging process possibly will be responsible for new understandings into the improvement of age-related diseases and elongated life span.



- Experimental and clinical reports on anti-inflammatory, antioxidant, and immunomodulatory effects of Curcuma longa and curcumin, an updated and comprehensive review

By Arghavan Memarzia, Mohammad R. Khazdair, Sepideh Behrouz, Zahra Gholamnezhad, Maryam Jafarnezhad, Saeideh Saadat and Mohammad H. Boskabady

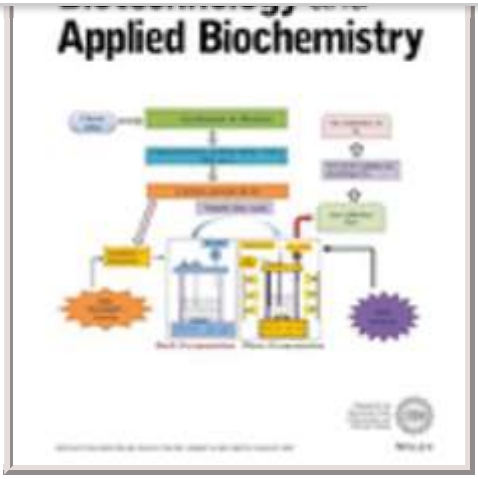
Curcuma longa (C. longa) or turmeric is a plant with a long history of use in traditional medicine, especially for treating inflammatory conditions C. longa and its main constituent, curcumin (CUR), showed various pharmacological effects such as antioxidant and anti-microbial properties. The updated knowledge of antiinflammatory, antioxidant, and immunomodulatory effects of C. longa and CUR is provided in this review article. Pharmacological effects of C. longa, and CUR, including anti-inflammatory, antioxidant, and immunomodulatory properties, were searched using various databases and appropriate keywords until September 2020. Various studies showed anti-inflammatory effects of C. longa and CUR, including decreased white blood cell, neutrophil, and eosinophil numbers, and its protective effects on serumlevels of inflammatory mediators such as phospholipase A2 and total protein in different inflammatory disorders. The antioxidant effects of C. longa and CUR were also reported in several studies. The plant extracts and CUR decreased malondialdehyde and nitric oxide levels but increased thiol, superoxide dismutase, and catalase levels in oxidative stress conditions. Treatment with C. longa and CUR also improved immunoglobulin E (Ig)E, proinflammatory cytokine interleukin 4 (IL)-4, transforming growth factor-beta, IL-17, interferon-gamma levels, and type 1/type 2 helper cells (Th1)/(Th2) ratio in conditions with disturbance in the immune system. Therefore C. longa and CUR showed anti-inflammatory, antioxidant, and immunomodulatory effects, indicating a potential therapeutic effect of the plant and its constituent, CUR, for treating of inflammatory, oxidative, and immune dysregulation disorders.



We are pleased to announce that your contributions have helped BioFactors achieve an **increased Impact Factor in 2020 of 6.113 from 4.734 in 2019**. This means that the journal is now ranked 26 out of 145 in the category of Endocrinology & Metabolism and 64 out of 297 in the category of Biochemistry & Molecular Biology, and has a 5-year Impact Factor of 5.365.

Thank you for contributing to this success. Share your paper with your network and spread the word about your achievement!

Dr. Angelo Azzi, Editor-in-Chief, *BioFactors*



New Special 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 μm was fabricated on silicon wafer, further the surface was amine-functionalized for accommodating carboxylated-DNA probe. With DNA-target RNA complementation, the detection limit was attained to be 1 fM as estimated by a linear regression analysis [y = 1.5325x - 2.1171 R^2 = 0.9065] and the sensitivity was at the 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

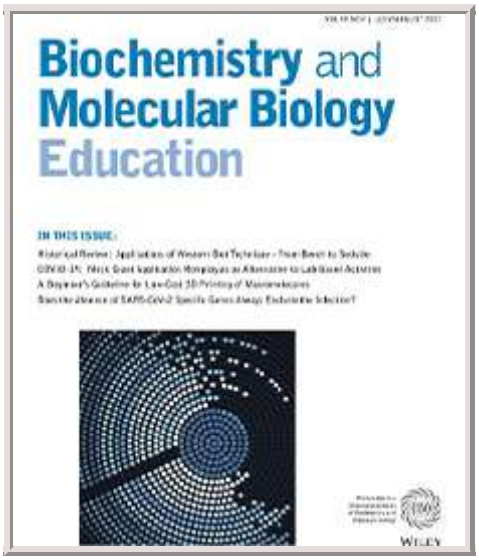
  Gap junctional intercellular communication (GJIC) is the transfer of ions, metabolites, and second messengers between neighboring cells through

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.

We are pleased to announce that your contributions have helped Biotechnology and Applied Biochemistry achieve an **increased Impact Factor in 2020 of 2.431 from 1.638 in 2019**. This means that the journal is now ranked 229 out of 297 in the category of Biochemistry & Molecular Biology and 110 out of 159 in the category of Biotechnology & Applied Microbiology, and has a 5-year Impact Factor of 2.124.

Thank you for contributing to this success. Share your paper with your network and spread the word about your achievement!

Dr. Gianfranco Gilardi, co-Editor-in-Chief, *Biot*echnology and Applied Biochemistry
Dr. Jian-Jiang Zong, co-Editor-in-Chief, *Biot*echnology and Applied Biochemistry



New Virtual Issue on Teaching in the Time of COVID-19

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.

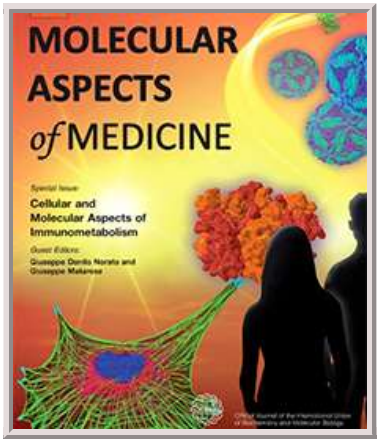
- A guided-inquiry investigation of genetic variants using Oxford nanopore sequencing for an undergraduate molecular biology laboratory course

  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.

We are pleased to announce that your contributions have helped Biotechnology and Applied Biochemistry achieve an **increased Impact Factor in 2020 of 1.160 from 0.924 in 2019**. This means that the journal is now ranked 282 out of 297 in the

Thank you for contributing to this success. Share your paper with your network and spread the word about your achievement!

Dr. Phillip A. Ortiz, Editor-in-Chief, *Biochemistry and Molecular Biology Education*



Volume 77, February 2021, 100897

Immunometabolic control of trained immunity

We are pleased to announce the 2020 Impact Factor (published by Clarivate Analytics) of *Molecular Aspects of Medicine* has gone up from 9.577 to 14.235. This means that the journal is ranked 15 out of 298 in the category Biochemistry & Molecular Biology and 5 out of 140 in the category Medicine, Research & Experiments, with a 5-year IF of 12.301.

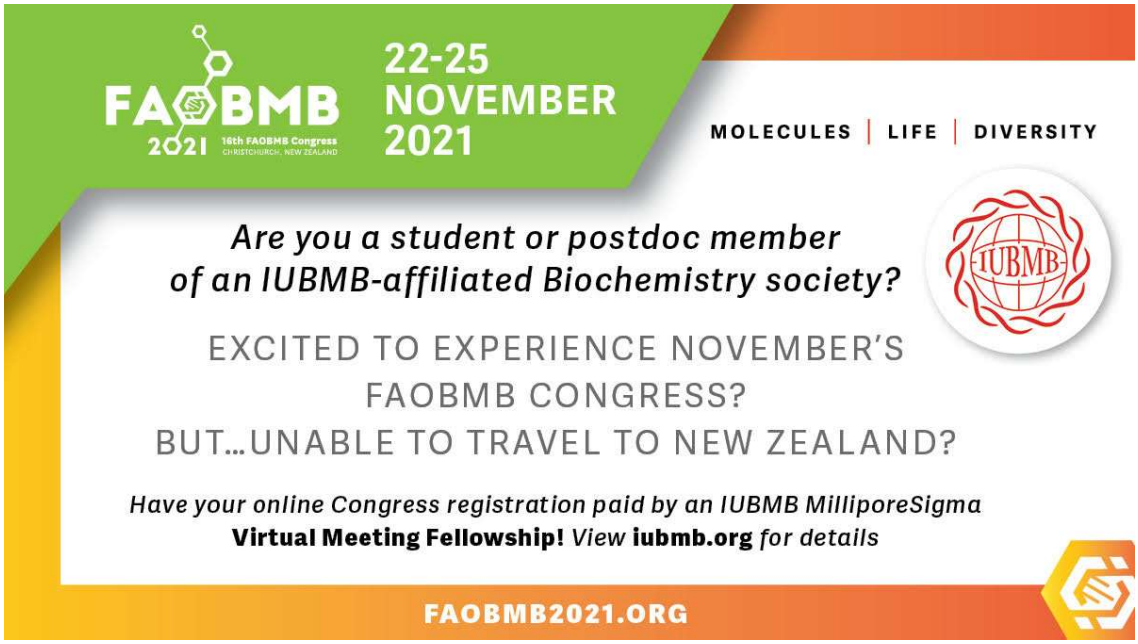
We wholeheartedly thank all the contributors for their hard work, dedication and support of the journal over the years!

Dr. Angelo Azzi, Editor-in-Chief, *Molecular Aspects of Medicine*
Ms. Valerie Teng-Broug, Sr. Publisher Elsevier

UPCOMING MEETINGS

Aug 18: Registration Deadline | **Sep 15-17:** Event
bit.ly/3xSWRWT

All parallel sessions will feature talks selected from the submitted abstracts, and the poster sessions will undoubtedly be a highlight of the meeting! We are accepting abstracts for oral and poster presentations, from both in-person and online delegates.



Chilean Society for Biochemistry and Molecular Biology 2021

Mid Year Touchpoint

Cono Sur Symposium: "When plant stress ad development collides underground"

Attendance is **FREE** of cost but requires registration. The webinar link will be sent one day before the event.

Aug 30: Event

Online poster | bit.ly/3jiJp9k

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

Apply Now

ANNOUNCEMENTS

FEBS-IUBMB-ENABLE 2022 Symposia

Based on a successful project funded by the EU H2020 Research and Innovation Programme (www.enablenetwork.eu), the FEBS-IUBMB-ENABLE conference series is a joint initiative of FEBS, IUBMB (the International Union of Biochemistry and Molecular Biology) and four leading biomedical research institutes across Europe: the Institute for Research in Biomedicine (IRB Barcelona, Spain), the Radboud Institute for Molecular Life Sciences (Nijmegen, the Netherlands), The Novo Nordisk Foundation Center for Protein Research (Copenhagen, Denmark), and the European School of Molecular Medicine (Milan, Italy).

Press release by IRB Barcelona: bit.ly/3xjqjol

ENABLE Milan Conference 2021

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