

A Changing Research and Publication Landscape for Biochemistry

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Abstract: This introductory editorial hopes to convey three points to its audience. First, it provides an overview of the new, peer-reviewed, open access journal *Biochemistry Insights* published by *Libertas Academica*. Second, it summarizes the benefits of open access publishing concepts to the biochemistry community. And third, it takes a brief look at the near future of biochemistry as a fundamental molecular science whose continued advances and latest developments will be the focus of the new journal. *Biochemistry Insights* looks forward to receiving research articles, review papers, commentaries and letters from all disciplines and specialties of the field.

Introduction

It is with great pleasure to announce the launch of *Biochemistry Insights*, a new, peer-reviewed, open access journal published by *Libertas Academica*. The birth of a new journal is always exciting and this is especially true for journals that cover such a fundamentally important and wide-ranging discipline as biochemistry. It goes without saying that biochemistry and biochemistry-based technologies are among the most rapidly growing disciplines at the interfaces between physics, chemistry, biology, and medical sciences. Biochemistry offers an autonomous, molecularized outlook on life. It covers a variety of subjects that are relevant to all life forms, health and disease, diagnostics, bioanalytical applications, agricultural, environmental, nutritional and pharmaceutical studies, as well as technological developments. We trust that this publishing initiative will provide a much-needed new forum for dissemination of ever-increasing amounts of biochemical knowledge throughout high quality research articles, review papers, and an array of other submission types. The journal aspires to deliver useful, reliable, and timely information on current advances and the latest developments in the field which will be freely available to anyone worldwide. I invite you to see *Biochemistry Insights* as your journal.

Aims and Scope

While *Biochemistry Insights* may be new, the primary mission of reporting biochemical research remains similar. However, in its digital form it comes closer to comprehensiveness. The journal publishes original work devoted to experimental, methodological, and theoretical research in all areas and topics of biochemistry. This includes the chemistry, structure, and functionality of enzymes and proteins, carbohydrates, lipids, nucleic acids, hormones, vitamins, and smaller molecular components of cells and tissues. Cell metabolism and energy transduction, biological oxidation, genomes and the molecular basis of genetic expression, protein synthesis, the chemistry of the immune response, cell signalling, transportation, signal transduction, as well as chemiluminescence, photosynthesis, and nitrogen fixation are included but are not exclusive subjects. The journal also accepts articles on related topics applicable to this area, such as technology, outcomes, techniques and applications, bioanalytical, and high throughput biochemical methods.

Open Access

Biochemistry Insights is launched at an exciting but challenging time for scientific publishing in a changing research environment. There is a definite need for fully electronic, peer-reviewed primary

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sources without access, permission, or price barriers. *Biochemistry Insights* is published exclusively online with no boundaries on the Internet, and the new journal follows the open access publishing principles. Under the open access model, all articles are freely available to anyone anywhere in the world at no cost to the reader. Authors retain copyright of their work and can grant anyone the right to reproduce and disseminate it, provided that it is correctly cited and no errors are introduced, under the Creative Commons “CC-BY” license. This flexibility and immediate access is paired with rigorous, fair, and rapid peer review. Evaluation of manuscripts is conducted by at least two experts in the subject area. The Editorial Board members and the referees who are selected from the wider biochemistry community are leading scientists in their respective fields and have volunteered to donate their time and labor to assist this endeavor.

In conventional print journals, the costs of publication are covered by subscriptions, paid by the reader. As in other open access journals, *Biochemistry Insights* included, these costs are carried by the author, the author’s institution, or research funds in the form of a reasonable publication processing fee. Many grant-awarding agencies attach importance and value to open access publishing by approving their funds to be used for this purpose. Fee waivers and discounts are available from the publisher on a case-by-case basis, and the journal will work hard to ensure that insufficient funds does not thwart the common goal of publishing high quality articles and the most complete and best information in the field, irrespective of authorship or country of origin. From personal experience I can attest to the fact that nothing is more convenient and helpful than readily available, immediate information without the requirements of subscriptions, licensing fees, or pay-per-view fees.

Biochemistry Insights integrates the best of online publishing with an unequaled hardcopy format. The articles will follow a uniform appearance for consistently high visual outcome equivalent to the finest print publications. But unlike paper-based journals, the electronic format enables the all-inclusive use of digital technologies, such as the incorporation of large primary or processed data sets, slide shows, animations or video clips, links to web pages, as well as unlimited usage of color at no extra charges to the authors.

Biochemistry Insights is a twenty-first century initiative designed to provide the most comprehensive information with respect to contemporary research. The new journal vies with a number of existing subscription-based journals in the field. One can realistically expect that *Biochemistry Insights* will coexist with a plethora of conventional hard-copy publications in the foreseeable future, and that wide-scale adoption of online publications and gradual replacement of traditional publishing media will be inevitable as digital technologies offer extra opportunities to authors not found elsewhere. Open access is of enormous benefit to scientists working in research and development around the world where institutional libraries are unable to afford subscription fees for a full range of journals.

Perceptions of the Future

Biochemistry as a fundamental molecular science has been around a long time. The diversity and specialization of modern biochemistry can be viewed as a measure of continued success in the first decade of twenty-first century. *Biochemistry Insights* is a journal whose growth and interest will obviously parallel new trends and developments in this broad field. The new journal will present a range of publications that attests to the variety and depth of research in all aspects and subspecialties of biochemistry and which finds a common ground in the quest for biochemical understanding of life. Life supporting metabolic pathways are fairly well conserved and are based on a relatively few fundamental strategies and interlocked molecular networks. Organisms acquire the energy and chemical components for maintaining life by means of these common metabolic pathways. Still life is extremely diverse in itself. All life forms share a common biochemical ancestral heritage from which life has acquired diversity through billions of years of evolution. However, the magnitude and inferences of this ubiquitous diversity are understood only incompletely. Both unity and diversity of life pose not only a vast challenge to biochemists, but also a practically inexhaustible opportunity for research and development in the coming decades.

There is an immense variety of living organisms and cell types. New organisms are discovered still today, amazingly enough even in environments that are seemingly incompatible with life. All life

forms are subject to the laws of physics and chemistry. Importantly for biochemistry, most life processes operate far from chemical and thermodynamic equilibrium. In the cell, chemical reactions occur in a structured but crowded molecular environment. Physical parameters like temperature or concentration gradients affect the life supporting reactions in many ways. Describing and explaining these processes is a major challenge of biochemical research, and not just on molecular level but on cellular and systems levels as well. Like systems biology, dare we say, molecular systems biochemistry will be a hallmark of the impending future.

It is also important to note that contemporary biochemistry uses modern technology to study biological systems. Advances in miniaturization, microarrays, high-resolution imaging, and other platforms are significantly expanding traditional laboratory capabilities. Massively parallel analysis of biomolecular interactions and high-throughput bioanalytical applications are set to become an everyday tool for biochemists. Exotic approaches like remote sensing technologies can create an effective reality on the frontiers of this discipline. High-performance computational capabilities, which did not exist before, are also improving our ability to study complex phenomena. The potential applications of new technologies that can be thought about for biochemical systems are

becoming almost limitless and have the capability to be a factor in the solution of many scientific problems. Accordingly, *Biochemistry Insights* will also report new studies that bridge laboratory and technology, theory and practice, all connected with life, which will lead to a comprehensive understanding and application of biochemistry.

Conclusion

Open access will benefit biochemistry with a unique voice and role in this area of science. It offers rich opportunities and use of information in innovative ways. The new journal will be essential reading for everyone who wishes to stay abreast of the latest developments in the field. We look forward to a productive partnership with our readers. I anticipate that *Biochemistry Insights* will be a magnet for manuscripts of the highest quality. On behalf of the Editorial Board, I would like to invite you to submit research articles, reviews, commentaries and letters, and hope that you will encourage your colleagues to do the same. For further information on *Biochemistry Insights* please click on the links in the “[about this journal](#)” box at the bottom of the journal table of contents. Please also visit the publisher’s [homepage](#) for other online journals that may be related to your research.

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