Biochemistry: an eternal science

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Biochemistry has had a long and prestigious history. It is now more than 100 years since the Nobel Prize was awarded to Eduard Buchner for his work on alcohol dehydrogenase1. However, enzymes continue to be a source of vast research and endless endevour on the part of biochemists worldwide. The depth of understanding pertaining to the chemical nature of biological entities is astonishing. Yet, even more astonishing is how little we still understand. We live in a molecular age where all aspects of biology must be understood at the level of macromolecules and their chemical constituents. However, basics of a lot of fundamental processes still elude us. Looking beyond simple healthy cellular activities, we now live in an age where many diseases are no longer a threat, but other diseases remain as mysterious or as fatal as they have ever been. In particular, my own area of research, neurodegeneration, remains one of the final frontiers to be fully understood at a molecular level.

In this regard, biochemistry remains an essential tool and an essential field of endeavour. While the definition of ‘bioscience’ seems to expand to cover an ever increasing number of sub-disciplines, it is somewhat refreshing that biochemistry can still be easily defined as a unique and powerful area of bioscience research. Its fundamental endeavour to uncover the macromolecular mechanisms of action in any biological system makes it the ‘engineering’ of the biosciences field. While many would argue that this could also be said about biotechnology, even this area is reliant on biochemical understanding to turn biochemical processes into a ‘technology’ that can be utilised in numerous applications, ranging from biofuels to biosensors.

Biochemistry remains a fundamental science, dealing with the raw nature of cellular and molecular mechanisms. While molecular biology often attempts to claim centre stage in this regard, it is perhaps sobering to reflect that molecular biology is often purely descriptive, whereas biochemistry serves the purpose of giving meaning to molecular interactions. Thus, while technology to analyse molecular systems continues to advance and develop, the fundamental premise behind new technologies remains the delineation of biochemical mechanism. Thus, in the world of research, biochemistry remains an eternal science that will forever be necessary for understanding the fundamental basis of what we are.

We live in what is commonly known as the ‘post-genomic era’. The ability to determine the complete DNA structure of an entire organism has been heralded as a great revolution in bio-science. However, in a sense, this revolution has passed us by. Almost 10 years on and we still have no cure for a single disease based on sequencing of the human genome. Why? The answer is quite simple. Basic understanding of protein function and molecular pathways that these proteins are involved in has not yet reached the same level of detail. It is inevitable that a ‘biochemical’ revolution must eventually follow if we are to make the most of the in-depth genonomic knowledge possessed by us.

In the context of this background, it is a pleasure to introduce a new biochemistry-focussed journal to the research community. The new journal OA Biochemistry is a gold standard open access publication from Open Access Publications London. In an age where open access publication is seen as the way forward for scientific and medical research, very few journals are dedicated to open access publication routes for biochemists. The Research Councils UK has now established a policy that all research works funded by them should be published in open access journals, and in parallel, the UK government has allocated funds to cover the costs of increased open access publishing. This policy will take force in 2013, and while this policy is limited to the UK, it is expected that the trend towards open access publication will spread globally. Therefore, the founding of OA Biochemistry represents an excellent opportunity to establish a new high impact biochemistry journal in the open access arena.

OA Biochemistry welcomes submission of top quality biochemistry research of all kinds. As a Chief Editor, I will act to ensure fair and equitable peer reviewing of all submitted research articles or reviews. The biochemical field is very broad and we are currently recruiting an excellent and broad range of editors to deal with the handling needs of a journal that will cover all aspects of basic research into areas covered by biochemistry. OA Biochemistry will also ensure equity for authors from low income countries by accepting articles with reduced or negated article processing charges.

Biochemists will be principally interested in submitting original research studies that describe new findings. The journal welcomes any new research studies from any area as long as the fundamental basis of their study is a mechanistic insight into a biochemical process. While my own interests are principally in the area of...

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neurodegeneration, a wide range of expertise in the editorial board means that we will be able to publish any aspect covered by well-established biochemistry journals such as The Journal of Biological Chemistry, Biochemistry and The Biochemical Journal. As an open access and paperless journal, OA Biochemistry will provide a more streamlined and rapid publication service that will see cutting edge research works reach a global audience within weeks after submission rather than many months. This is clearly advantageous over other older journals whose publication turnaround has frequently been an issue of contempt for many researchers.

Prospective authors also have the opportunity to submit articles in a range of other formats in addition to original research articles. Those of interest to biochemists include short communications. These will principally be similar to original research articles, but they will include highly topical studies with potentially greater impact. It should be noted that such articles are not preliminary findings that require extensive verification through further work, but they will be stand-alone and insightful. Additionally, submission of articles describing novel methodologies is also encouraged. In this case, the authors will need to establish not only a proof of principle for the method in question but also clearly demonstrate that the method is advantageous over other previously described techniques or that it provides something novel, such as an additional tool to the arsenal of biochemists.

Outside the range of novel research, OA Biochemistry will also consider articles such as critical reviews that cover a timely topic in critical, unbiased details to give an up-to-date account of the latest findings. On the other hand, hypothesis articles may provide a novel insight into an area of research, looking at past data and suggest an alternative explanation for findings that may lead to new research directions. Finally, meetings reviews can often provide a similar overview to review articles by placing the reading in the heart of an exciting area as it has been presented at a recent conference of note.

Above and beyond these specifications, OA Biochemistry plans to be the new leading open access biochemistry journal in the 21st century. Biochemistry has remained the key to eternal mysteries of the biological sciences for over a century and will continue to do so in future. We encourage you to please send us your new and interesting research works. Further information concerning OA Biochemistry can be found on the website of Open Access Publications London or simply click on the URL.

References