



Contents lists available at ScienceDirect

Biochimica et Biophysica Acta

journal homepage: www.elsevier.com/locate/bbagen



Preface

Current methods to study reactive oxygen species – Pros and cons

Advances in the field of redox biology are critically dependent on the availability of accurate and robust assays for detecting reactive oxygen species and identifying the products of their reactions. Ideally methods are needed that can distinguish specific oxidants, quantify production and characterise their reactions with different biomolecules. The high reactivities and short lifetimes of reactive oxidants make these challenging tasks, and it is vital to select the most appropriate methods and appreciate their strengths and limitations. In this issue of BBA, we have brought together a group of high calibre scientists with expertise in a wide range of methodologies, and asked them to give a critical appraisal of how these methodologies can be applied. The volume covers detection methods for a broad spectrum of oxidants as well as assays for oxidation products from DNA, lipids and proteins. The different articles inform readers on what methodologies are available, when they can be used, and where they are open to interpretation and should be applied with caution. As editor of the volume, I am impressed by the scope of methods available in the redox field and the information that can be obtained if they are used appropriately. However, I am also aware that in many cases there are limitations, especially for absolute quantification in complex matrices and for real time measurements in cells and in vivo. It could also be said that the more you know about a method, the less specific it becomes. Therefore it is important that investigators

know the capability of each approach, what it can deliver, and potential pitfalls. Our authors provide the information on which to base this assessment.



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