



Reactive Oxygen Species (ROS), Haematopoiesis and Leukaemia

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Message from the Guest Editor

Reactive oxygen species (ROS) are produced as a by-product of mitochondrial function, but are also deliberately produced by the NADPH oxidase protein family. Several studies show that cancer, including haematopoietic (blood) malignancies, overproduce ROS and/or modify the expression of antioxidants, leading to the promotion of cell survival and proliferation. The role of oxidative stress in the pathogenesis of blood cancers, including leukaemia, involves redox adaptation and changes in the activity of the cell signalling molecules, such as second messengers or transcription factors. Furthermore, while it has long been known that cancer cells exhibit a greatly altered metabolism, only recently have the purposes behind this altered metabolism started to be elucidated. Recently, REDOX adaptation has also elucidated changes in the metabolism, leading to a “re-wiring”, which can sustain the production of antioxidants, glutathione, NAD(P)H, and other biomass molecules that may support proliferation and DNA repair. Future works elucidating the intricate pathways that redox signalling modulates provide much promise for the future treatment of leukemias.





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Message from the Editor-in-Chief

It has been recognized in medical sciences that in order to prevent adverse effects of "oxidative stress" a balance exists between prooxidants and antioxidants in living systems. Imbalances are found in a variety of diseases and chronic health situations. Our journal *Antioxidants* serves as an authoritative source of information on current topics of research in the area of oxidative stress and antioxidant defense systems. The future is bright for antioxidant research and since 2012, *Antioxidants* has become a key forum for researchers to bring their findings to the forefront.

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