# Article information:

Reactive oxygen species (ROS) homeostasis and redox regulation in cellular signaling - ScienceDirect  
<https://www.sciencedirect.com/science/article/abs/pii/S0898656812000137>

# Article summary:

1. Reactive oxygen species (ROS) are generated endogenously and can cause oxidative stress when they overwhelm the cellular antioxidant defense system.

2. ROS have been implicated in a variety of diseases, including cancer, neurodegeneration, atherosclerosis, diabetes, and aging.

3. This review explores the oxidative interface between ROS and a variety of cellular signaling pathways that regulate different cellular processes.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Reactive oxygen species (ROS) homeostasis and redox regulation in cellular signaling” is an informative overview of the role of ROS in regulating cellular signaling pathways. The article provides a comprehensive overview of the mechanisms by which ROS can alter protein function through oxidation of cysteine residues on proteins to form reactive sulfenic acid. It also discusses how ROS can regulate MAPK, PI3K, Nrf2/Ref1-mediated redox cellular signaling, p66Shc mitochondrial oxidative stress and aging, as well as iron homeostasis.

The article is generally reliable and trustworthy due to its comprehensive coverage of the topic at hand and its use of scientific evidence to support its claims. The article does not appear to be biased or one-sided in its reporting; it presents both sides equally by providing evidence for both positive and negative effects of ROS on cellular signaling pathways. Furthermore, it does not appear to contain any promotional content or partiality towards any particular viewpoint or opinion on the subject matter.

The only potential issue with this article is that it does not explore any counterarguments or alternative points of view regarding the role of ROS in regulating cellular signaling pathways. While this may be due to space constraints or other factors, it would have been beneficial for readers if some counterarguments were presented so that they could gain a more balanced understanding of the topic at hand. Additionally, while possible risks associated with ROS are mentioned briefly throughout the article, there is no detailed discussion about them which could have provided readers with further insight into this important aspect of the topic being discussed.

# Topics for further research:

* ROS regulation of MAPK
* PI3K redox signaling
* Nrf2/Ref1-mediated oxidative stress
* p66Shc mitochondrial aging
* Iron homeostasis and ROS
* Risks associated with ROS

# Report location:

<https://www.fullpicture.app/item/d36361fb24eefce5ded272e476f31c00>