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Paraoxonase-1 and Other HDL Accessory Proteins in Neurological Diseases

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Message from the Guest Editors

Substantial evidence suggests that oxidative stress (OxS) is a key player in the pathogenesis of several neurological diseases. Paraoxonase-1 (PON1) is a high-density lipoprotein (HDL)-associated enzyme that endows its carrier with multiple biological functions. The impact of PON1 on HDL function relies on finely tuned coordination with apolipoproteins, primarily Apolipoprotein A1 (Apo A1), and other (putative) accessory proteins, such as myeloperoxidase (MPO), platelet-activating factor-acetylhydrolase, or serum amyloid A. OxS and triggered inflammation modify the HDL proteome and lipidome, leading to a dysfunctional HDL that has reduced antioxidant PON1 and accumulates pro-oxidative MPO, giving rise to a self-perpetuating detrimental cycle. This phenomenon appears to be critical in pathological processes and vascular diseases, which are well-established risk factors for CNS disorder, such as AD and VD.

This research topic will discuss experimental and epidemiological evidence giving meaningful insight into the role of PON1 and other HDL accessory proteins in the onset/progression of neurological disorders.



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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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