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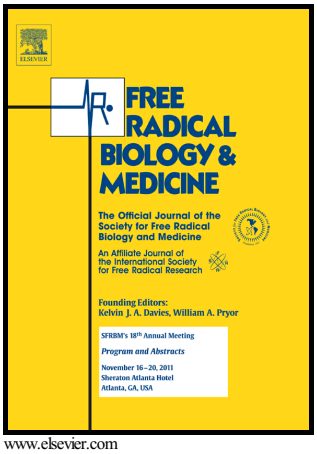

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Nox4 in Renal Diseases: An Update

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Abstract

Reactive oxygen species derived from NADPH oxidase contribute to a wide variety of renal diseases. Nox4, the major NADPH isoform in kidney, produces mainly H_2O_2 that regulates physiological functions. Nox4 contributes to redox processes involved in diabetic nephropathy, acute kidney injury, obstructive nephropathy, hypertensive nephropathy, renal cell carcinoma and other renal diseases by activating multiple signaling pathways. Although Nox4 is found in a variety of cell types, including epithelial cells, podocytes, mesangial cells, endothelial cells and fibroblasts, its role is not clear and even controversial. In some conditions, Nox4 protects cells by promoting cell survival in response to harmful stimuli. In other scenarios it induces cell apoptosis, inflammation or fibrogenesis. This functional variability may be

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