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## PEROXYNITRITE SCAVENGING BY NO MODULATORY ACTIVITIES OF HYDROQUINONE FROM COFFEE

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Peroxynitrite (ONOO<sup>-</sup>), a potent cytotoxic oxidant formed by the reaction of nitric oxide ( $\cdot$ NO) and superoxide radical ( $\cdot$ O<sub>2</sub><sup>-</sup>), reacts rapidly to cause of oxidization and nitration process. The importance of the regulation of ONOO<sup>-</sup> has been recently recognized because of the lack of specific endogenous enzymes against ONOO<sup>-</sup>. Coffee that is a complex mixture containing a variety of components has been reported to have both beneficial and hazardous effects. In the present study, we investigated the ONOO<sup>-</sup> scavenging effect of coffee ingredient, hydroquinone and its biological effect on NO metabolism in the murine macrophage cell line RAW 264.7. Hydroquinone showed the significant inhibition on ONOO<sup>-</sup>-induced nitration of GSH reductase in a dose-dependent manner. Furthermore, hydroquinone led to scavenge ONOO<sup>-</sup> through nitration. Moreover, stimulation with bacterial wall component lipopolysaccharide (LPS) significantly increased level of NO<sub>x</sub> in RAW 264.7 cells, while hydroquinone blocked the increase of NO<sub>x</sub> and suppressed the activation of iNOS. This indicated that hydroquinone also reduced endogenous NO generation. These data begin to provide the understanding of the ONOO<sup>-</sup> scavenging activity of hydroquinone and possibly the use of leader compounds as therapeutic agents in various disorders.