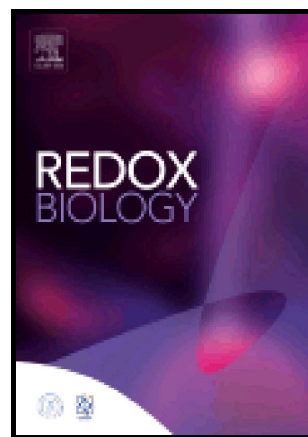


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A Novel Redox Regulator, MnTnBuOE-2-PyP⁵⁺, Enhances Normal Hematopoietic Stem/Progenitor Cell Function

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Normal Hematopoietic Stem/Progenitor Cell Function**

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ABSTRACT

The signaling of reactive oxygen species (ROS) is essential for the maintenance of normal cellular function. However, whether and how ROS regulate stem cells are unclear. Here, we demonstrate that, in transgenic mice expressing the human manganese superoxide dismutase (MnSOD) gene, a scavenger of ROS in mitochondria, the number and function of mouse hematopoietic stem/progenitor cells (HSPC) under physiological conditions are enhanced. Importantly, giving MnTnBuOE-2-PyP⁵⁺ (MnP), a redox- active MnSOD mimetic, to mouse primary bone marrow cells or to C57B/L6 mice significantly enhances the number of HSPCs. Mechanistically, MnP

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