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Updates on Erythropoietin

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Message from the Guest Editor

Dear Colleagues,

Red blood cells carry oxygen to all organs in the body. Hypoxia and anemia cause cell damage and finally result in cell death. Erythropoietin (Epo) is produced via the activation of HIF2a and downregulation of PHD2 by hypoxia and anemia. Erythropoiesus-stimulating agent (ESA) and PHD inhibitors were used to substitute the erythrpoietic effects of Epo for patients with renal anemia. Epo has many effects on cellular function other than the production of blood cells. After many large-scale studies, ESAs were found not to have renoprotective effects. However, PHD inhibitors have renoprotective effects, especially in cases of ishchemic reperfusion injury. Although exogenous Epo (ESAs) does not have renoprotective effects, endogenous Epo produced by PHD inhibitors has renoprotective effects, suggesting that the HIF-PHD-Epo cascade is related to cell survival. The purpose of this Special Issue is to gather various data on the HIF-PHD-Epo cascade to discuss the role of endogenous Epo in cell survival against hypoxia.

Dr. Hiroshi Nonoguchi
Guest Editor

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Message from the Editor-in-Chief

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