

techman / October 26, 2011 12:07PM

[\[Stem Cell\] NTU Research Team Publishes Findings about Key Factor of Erythropoiesis in 《Stem Cells》](#)[Stem Cell] NTU Research Team Publishes Findings about Key Factor of Erythropoiesis in 《Stem Cells》 ([Chinese Version](#))

NTU Newsletter (Issue 1066) A research team led by Professor Hsinyu LEE, Department of Lifescience, NTU, discovered that lysophosphatidic acid receptor 3 (LPA<sub>3</sub>) has a decisive influence on the development of red blood cells in human body. The findings were published in Stem Cells (IF 7.871, 2010), and they were expected to benefit the patients suffering from hematopoietic defects.

Professor LEE had shown his excellence in research, 40 published papers, as a PhD student at the University of California, San Francisco. His works had pointed out that the interaction between LPA and various receptors can activate certain endothelial cells expressions in blood vessels including wound healing, cell adhesion and inflammation. However, LPA's influences on development and stem cells were not clear yet. Professor LEE's team in this present publication found that via the zebrafish embryo model, the expression of restrained LPA receptor 1 was lymphangiogenesis defects. Besides, the team also pointed out that LPA receptor 3 critically controls the development of red blood cells, since the genesis defects of red blood cells were observed as well in its restraint. The team also observed a large volume of LPA receptor 3 expression at the early stage of the differentiation of hematopoietic stem cells, while LPA itself accelerate differentiation of red blood cells as well, proving that LPA induces erythropoiesis through activating LPA receptor 3.

Erythropoietin, also named EPO, was the present measure to help anemia patients, but some recent papers suggested EPO might induce hypertension or accelerate tumorigenesis. Professor LEE's findings suggested, the treatment with low-dosed EPO added with LPA could replace traditional EOP treatment, reducing the risk of side effects.

Reference:

[NTU Newsletter Issue 1066](#) (Chinese)

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[National Science Council International Cooperation Sci-Tech Newsbrief](#)

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Edited 1 time(s). Last edit at 10/26/2011 12:08PM by techman.