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[\[Stem Cell\] Local Cross-institute Research Team Announces Stem Cell Science Breakthrough](#)

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The China Post (2012/07/17) A research team from Taipei Veterans General Hospital and National Yang Ming University announced July 16 a breakthrough in the cultivation of stem cells that will provide a better source of such cells for disease treatment.

The use of mesenchymal stem cells, which can be obtained from bone marrow, is less controversial than the use of embryonic stem cells, said Shih-chieh HUNG, the professor leading the team.

The team found in animal tests that mesenchymal stem cells helped the healing of wounds and the regeneration of blood vessels.

The tests also show that mesenchymal stem cells are helpful in treating poor circulation, which is often found in diabetic patients, as well as in repairing broken bones and damaged joints, HUNG said.

The findings, along with the results of other studies, suggest that mesenchymal stem cells can be used in the treatment of blood clots in peripheral arteries and in cases of bone marrow transplant rejection.

In addition, HUNG said, they found that under hypoxic conditions, the culture of mesenchymal stem cells can obtain better results.

At an oxygen level of 1 to 2 percent, the amount of mesenchymal stem cells yielded after 60 days of culture is 100 to 1,000 times the results under the normal oxygen level of 21 percent, Hung said.

He noted that the new cells bear an 80- to 90-percent similarity to embryonic stem cells and have two genetic expressions — Oct4 and Nanog — of embryonic stem cells.

Oct4 and Nanog are both factors involved in the self-renewal of embryonic stem cells and the team found that the two factors also play the same role in mesenchymal stem cells.

The results of the research, of which Chih-chien TSAI — a researcher at the university's Institute of Clinical Medicine — is the first author, were published in the journal Molecular Cell and online July 12.

Reference:

[The China Post 2012/07/16](#)

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

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