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Stem cells can repair diseased lungs: study
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STOCKHOLM, Sept 18, 2007 (AFP) - Lung cells grown from mouse embryo stem cells have been successfully implanted into the lungs of mice, a breakthrough that could one day help humans with sick lungs, researchers said on Tuesday.

The experiment was conducted by a team of scientists from London's Imperial College and is a "global breakthrough" that "opens up exciting new horizons for the treatment of lung disease," a statement from the European Respiratory Society's (ERS) annual congress in Stockholm said.

In the experiment, the researchers injected lung cells cultivated from embryonic stem cells into the mice's lungs.

Two days later, they killed the rodents and found that the lung cells had lodged themselves in the animals' lungs, demonstrating the "high degree of specialisation of these cells, which attach only to their target organ, ie. the lungs," the statement said.

Embryonic stem cell therapy has given rise to hopes for the treatment of many conditions and could one day help repair organs, such as a heart damaged by a heart attack.

Experiments suggest stem cells could also yield effective treatments for Parkinson's and Alzheimer's disease, spinal cord injury, diabetes, osteoarthritis, and numerous other illnesses.

But lung diseases have not yet benefited from stem cell research.

One of the great challenges of cell biology is figuring out how stem cells remain unspecialised or "pluripotent," maintaining the capacity to become virtually any type of cell found in blood, nerves and individual organs.

"The lung is a very difficult target for tissue engineering researchers ... especially since it is an extremely complex organ and contains a large variety of cells, some of which have a very slow renewal rate," researcher Sile Lane of Imperial College said in the statement.

The ERS said the capacity to "regenerate lungs damaged by disease or accident would help tens of millions of patients."

While the study sparked "great hopes", the British researchers noted that human

medical applications were "still a long way off."

According to the ERS, respiratory diseases are the main cause of death in the world. In Europe, respiratory diseases cost society more than 100 billion euros (140 billion dollars) a year.

A total of 15,000 clinical doctors, researchers, physiotherapists and medical and pharmaceutical industry workers from more than 100 countries are attending the congress in Stockholm, which concludes on Wednesday.

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