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Stem cell hope for lung disease sufferers

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Lung transplants could be a consigned to history if a breakthrough announced yesterday comes to fruition.

Stem cells implanted into the tails of mice migrated to the lungs without spreading to other organs.

Researchers now hope that the cells can be encouraged to grow and replace damaged tissue.

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The advance is significant because, until now, lung tissue was considered too complex to be repaired in such a way.

But it will not lead to a cure for lung cancer. Sile Lane, one of the researchers at Imperial College, London, said: 'Our study shows that embryonic stem cells really do have the capacity to recolonise damaged lungs.'

'Lung tissue is complicated architecturally and cellularly. We're going to need all kinds of scaffolds to replicate the 3-D structure.'

His plea could have been answered already by another research team, which yesterday announced a simple but ingenious way of growing artificial stem cells in 3-D that may one day reduce the need for animal testing.

The team at Durham University uses a 10p-sized highly porous thinwhite polystyrene disc riddled with holes, like a sponge, as a workable 'scaffold' system.

Currently, stem cells can be grown only two-dimensionally in a Petri dish or flasks, which makes them less effective when they are under observation.

Dr Stefan Przborski, who led the research, said: 'Because the 3-D cells are cultivated under more realistic conditions, it means that they function more like real tissues.'

Robin Lovell-Badge of the National Institute of Medical Research said the developments were a big step forward for stem cell research. He added: 'The lung research sounds rather remarkable to me.

'In a situation where you've damaged the lungs it would be very beneficial. It's clearly an important area to be working in.

'The 3D structure is often very important in controlling how stem cells behave – whether they divide into other cells or develop into healing cells.

'They are far more likely to behave properly and not go wrong.'

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