

Key to immune system disease could lie inside the cheek

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Powerful new cells created by Cardiff University scientists from cheek lining tissue could offer the answer to disorders of the immune system.

While the body's immune system protects against many diseases, it can also be harmful. Using [white blood cells](#) (lymphocytes), the system can attack insulin-producing cells, causing diabetes, or cause the body to reject transplanted organs.

A team from Cardiff's School of Dentistry led by Professor Phil Stephens, with colleagues from Stockholm's Karolinska Institute, have found a new group of cells with a powerful ability to suppress the immune system's action.

The team took oral lining cells from the insides of patients' cheeks and cloned them. [Laboratory tests](#) showed that even small doses of the cells could completely inhibit the [lymphocytes](#).

The breakthrough suggests that the cheek cells have wide-ranging potential for future therapies for immune system-related diseases. Existing immune system research has focussed on [adult stem cells](#), particularly those derived from bone marrow. The cheek [tissue cells](#) are much stronger in their action.

Dr Lindsay Davies, a member of the Cardiff team, said: "At this stage, these are only laboratory results. We have yet to recreate the effect outside the laboratory and any treatments will be many years away.

However, these cells are extremely powerful and offer promise for combating a number of diseases. They are also easy to collect – bone marrow stem cells require an invasive biopsy, whereas we just harvest a small biopsy from inside the mouth."

The findings have just been published online in *Stem Cells and Development*. The team has now been funded by the Medical Research Council to investigate the cloned cells further.

Provided by Cardiff University

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