Pumpkin: A fairytale end to insulin injections?

July 9 2007

Compounds found in pumpkin could potentially replace or at least drastically reduce the daily insulin injections that so many diabetics currently have to endure. Recent research reveals that pumpkin extract promotes regeneration of damaged pancreatic cells in diabetic rats, boosting levels of insulin-producing beta cells and insulin in the blood, reports Lisa Richards in Chemistry & Industry, the magazine of the SCI.

A group, led by Tao Xia of the East China Normal University, found that diabetic rats fed the extract had only 5% less plasma insulin and 8% fewer insulin-positive (beta) cells compared to normal healthy rats (*Journal of the Science of Food and Agriculture*, 87(9) 1753-7 2007).

Xia says: 'pumpkin extract is potentially a very good product for pre-diabetic persons, as well as those who have already developed diabetes.' He adds that although insulin injections will probably always be necessary for these patients, pumpkin extract could drastically reduce the amount of insulin they need to take.

David Bender, sub-dean at the Royal Free and University College Medical School, London, says: 'this research is very exciting… the main finding is that feeding pumpkin extract prevents the progressive destruction of pancreatic beta-cells… but it is impossible to say whether pumpkin extract would promote regeneration in humans.' He added: 'I think the exciting thing is that this may be a source of a medication that could be taken by mouth.'

The protective effect of pumpkin is thought to be due to both antioxidants and D-chiro-inositol, a molecule that mediates insulin activity. Boosting insulin levels has the effect of lowering blood sugar levels, which reduces levels of oxidative oxygen species that damage beta-cell membranes, preventing further damage and allowing for some regeneration. Beta cells levels in the diabetic rats are, however, unlikely ever to reach that of controls, because some of the cells will have been damaged beyond repair.

Diabetes affects more than 230m people, almost 6% of the world's adult population, according to the World Diabetes Foundation. The rats used in this study represent type I diabetes, but the researchers believe the pumpkin extract may also play a role in type II diabetes.

Source: Society of Chemical Industry