

## **Cannabis hope for inflammatory bowel disease**

*Embargoed until 00:01GMT on Thursday, December 17, 2009*

Chemicals found in cannabis could prove an effective treatment for the inflammatory bowel diseases Ulcerative Colitis and Crohn's Disease, say scientists.

Laboratory tests have shown that two compounds found in the cannabis plant – the cannabinoids THC and cannabidiol – interact with the body's system that controls gut function.

Crohn's Disease and Ulcerative Colitis, which affect about one in every 250 people in Northern Europe, are caused by both genetic and environmental factors. The researchers believe that a genetic susceptibility coupled with other triggers, such as diet, stress or bacterial imbalance, leads to a defective immune response.

Dr Karen Wright, Peel Trust Lecturer in Biomedicine at Lancaster University, will be presenting her soon-to-be published work at The British Pharmacological Society's Winter Meeting in London today (Thursday).

She said: "The lining of the intestines provides a barrier against the contents of the gut but in people with Crohn's Disease this barrier leaks and bacteria can escape into the intestinal tissue leading to an inappropriate immune response.

"If we could find a way to restore barrier integrity in patients we may be able to curb the inflammatory immune response that causes these chronic conditions."

Dr Wright, working with colleagues at the School of Graduate Entry Medicine and Health in Derby, has shown that cells that react to cannabinoid compounds play an important role in normal gut function as well as the immune system's inflammatory response.

"The body produces its own cannabinoid molecules, called endocannabinoids, which we have shown increase the permeability of the epithelium during inflammation, implying that overproduction may be detrimental," said Dr Wright.

"However, we were able to reverse this process using plant-derived cannabinoids, which appeared to allow the epithelial cells to form tighter bonds with each other and restore the membrane barrier."

The research was carried out using cell cultures in a dish but, interestingly, when the team attempted to mimic the conditions of the gut by reducing the amount of oxygen in the cells' environment, much lower concentrations of cannabinoid were needed to produce the same effect.

Dr Wright added: “What is also encouraging is that while THC has psychoactive properties and is responsible for the ‘high’ people experience when using cannabis, cannabidiol, which has also proved effective in restoring membrane integrity, does not possess such properties.”

The British Pharmacological Society (BPS) – the primary UK learned society concerned with research into drugs and the way they work – is hosting its annual Winter Meeting in London, attracting experts from across the world.

The three-day conference, running from 15 to 17 December 2009, will hear presentations on the latest pharmacological developments to tackle a range of conditions and diseases.

Ends

### **Notes to editors**

Dr Wright is available to talk to journalists about her research. To speak to her, please contact Aeron Haworth, Stehm Media, 07717 881563.

The full running order for the symposium is as follows:

9.15 **Therapeutic needs and strategies for gastrointestinal diseases – Professor Brendan Whittle**, William Harvey Research Institute, UK

9.45 **Potential therapeutic application of cannabinoid drugs in irritable bowel syndrome - Dr Angelo Izzo**, University of Naples, Italy

10.45 **Impact of cannabinoids on the maintenance of intestinal barrier integrity – Dr Karen Wright**, Lancaster University, UK

11.15 **Issues in drug development in gastrointestinal disorders – Dr Alyson Fox**, Novartis, UK.

Organizers: **Professor Roger Pertwee**, University of Aberdeen, **Professor Keith Sharkey**, University of Calgary and **Dr Karen Wright**, Lancaster University

Chairs: **Professor Roger Pertwee**, University of Aberdeen and **Dr Karen Wright**, Lancaster University

### **About the BPS**

The British Pharmacological Society (BPS) is the primary UK learned society concerned with research into drugs and the way they work. Our members work in academia, industry and the health services, and many are medically qualified.

The Society covers the whole spectrum of pharmacology, including the laboratory, clinical and toxicological aspects.

Clinical pharmacology is the medical specialty dedicated to promoting safe and effective use of medicines for patient benefit. Clinical pharmacologists work as consultants in the NHS and many hold prominent positions in UK Universities.

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