

# Salutary pizza spice

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Oregano doesn't only give a Pizza its typical taste. Researchers at Bonn University and the ETH Zürich have discovered that this spice also contains a substance which, amongst other qualities, appears to help cure inflammations. The researchers administered its active ingredient – known as beta-caryophyllin (E-BCP) - to mice with inflamed paws. In seven out of ten cases there was a subsequent improvement in the symptoms. E-BCP might possibly be of use against disorders such as osteoporosis and arteriosclerosis. The study has appeared on Monday, 23rd June in the *Proceedings of the National Academy of Sciences* (PNAS).

E-BCP is a typical ingredient of many spices and food plants. Hence it is also found in plants such as basil, rosemary, cinnamon, and black pepper. Every day, we consume up to 200 milligrams of this annular molecule.

No-one had previously realised that it can have a beneficial effect on the body. "Our results have revealed that E-BCP inhibits inflammation", declared Professor Dr. Andreas Zimmer of the Life&Brain-Zentrum in Bonn. But that's not all: "experiments on mice have shown that this substance is also effective against osteoporosis."

Beta-caryophyllin docks on specific receptor structures in the cell membrane - the so-called cannabinoid-CB2 receptors, and produces a change in cell behaviour: for example, it will inhibit the cell's production of phlogogenic signal substances. "We have used E-BCP to treat mice with paws swollen due to inflammations", explained Dr. Jürg Gertsch of

the ETH Zürich. "In up to 70 per cent of cases the swelling subsequently subsided".

Pizza can't make you high

Consequently, E-BCP could possibly form the basis for new drugs. One especial attraction for the pharmacological researcher is that this substance is so common in nature. But it has a further advantage in that, in contrast to other substances which affect the CB2 receptors, beta-caryophyllin does not lead to intoxication.

For this CB2 receptor has a "brother" by the name of CB1, which is best known to drug researchers. CB1 is found in the nerve cells of the brain, on which certain ingredients of the hemp plant can dock. What then happens is all too familiar to marijuana smokers.

Although CB1 and CB2 are not twins, they are nevertheless very closely related. Hence substances which stimulate CB2 often have an intoxicating effect. With E-BCP it is different, for this is the first known natural agent which binds specifically to CB2 and not CB1 – which explains why you can't get high on pizza.

Both receptors are part of the so-called endocannabinoid system, which researchers are finding to be of increasing significance for a variety of disorders. If this system gets out of control it can result in cardiac disorders, allergies and chronic pain, or it could even affect the memory. "Endocannabinoids are formed by the body itself and maintain its equilibrium" explains Professor Zimmer. So in the case of an inflammation they act like a brake, preventing the immune system from over-reacting to the extent that its defensive reaction runs amok.

E-BCP might also help us to control such chronic disorders as Chroné's disease – an inflammation of the intestinal tract. "This compound could

become an important dietary factor for inhibiting such diseases of modern civilisation", surmises Dr. Jürg Gertsch. However, anyone who in future spices all his food with oregano will not necessarily be any the healthier for it. "The endocannabinoid system comes into play when the equilibrium of the metabolic processes has been destroyed", declares Professor Zimmer. "It is similar to the antidepressants in that, although they help for depressions, they don't do anything to brighten the mood of a healthy person".

Source: University of Bonn

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