

# Previously undiscovered cannabis compound could lead to improved epilepsy treatment

September 13 2012

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(Medical Xpress)—Scientists at the University of Reading have demonstrated for the first time that a previously unstudied chemical in cannabis could lead to more effective treatments for people with epilepsy.

The team at the University's Department of Pharmacy and School of Psychology have discovered that cannabidivarin (CBDV) - a largely ignored [natural compound](#) found in cannabis - has the potential to prevent more seizures, with few side effects such as uncontrollable shaking, caused by many existing anti-epileptic drugs.

In the study, carried out by the University of Reading in collaboration

with GW Pharma and Otsuka Pharmaceuticals, cannabidivarin strongly suppressed seizures in six different [experimental models](#) commonly used in epilepsy [drug discovery](#).

Cannabidivarin was also found to work when combined with drugs currently used to control epilepsy and, unlike other cannabinoids (unique components in cannabis) such as THC, is not psychoactive and therefore does not cause users to feel 'high'.

The findings are reported in the [British Journal of Pharmacology](#) journal.

Dr Ben Whalley is leading the study at the University of Reading alongside colleagues Dr Gary Stephens and Dr Claire Williams.

Dr Whalley said: "This is an enormously exciting milestone in our investigations into non-psychoactive elements of cannabis as treatments for epilepsy.

"There is a pressing need for better treatments for epilepsy. It's a [chronic condition](#) with no cure and currently in around one third of cases, the currently available treatments do not work, cause serious side-effects and increase fatalities. Currently prescribed drugs to prevent fits can cause significant side-effects to individuals' motion and [cognitive abilities](#) that can adversely affect the quality of life for people who have to take them every day.

"Our work has highlighted the potential for a solution based on cannabinoid science. It has shown that cannabidivarin is the most effective and best tolerated anticonvulsant plant cannabinoid investigated to date."

Dr Stephen Wright, R&D director at GW Pharmaceuticals said: "These

results further underscore the potential of naturally-derived cannabinoids as medicines to treat a broad range of diseases. GW has established a track record of discovering and commercialising such compounds with Sativex now on the market for treating spasticity associated with multiple sclerosis and in late stage development for the treatment of cancer pain. Our research into CBDV has consistently produced highly promising results demonstrating its potential as a novel anticonvulsant and GW hopes during 2013 to advance CBDV into human clinical trials."

Following the discovery, scientists at Reading are investigating the mechanisms by which cannabidivarin works to reduce seizures and are testing CBDV in chronic models of epilepsy that closely mimic the clinical condition. This work will be completed by the end of 2012.

[Epilepsy](#) affects approximately 1% of people worldwide, and is caused by excessive electrical activity in the brain, which leads to [seizures](#) that are in some cases fatal.

**More information:** Reference: Hill AJ, Mercier MS, Hill TDM, Glyn SE, Jones NA, Yamasaki Y et al. (2012) Cannabidivarin is anticonvulsant in mouse and rat in vitro and in seizure models. *Br J Pharmacol* [doi.wiley.com/10.1111/j.1476-5381.2012.02207.x](https://doi.org/10.1111/j.1476-5381.2012.02207.x)

Provided by University of Reading

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