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## **Effect of synthetic cannabinoid HU210 on memory deficits and neuropathology in Alzheimer's disease mouse model.**

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### **Source**

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### **Abstract**

Cannabinoids have been shown to increase neurogenesis in adult brain, as well as protect neurons from excitotoxicity, calcium influx, inflammation, and ischemia. Recent studies have shown that synthetic cannabinoids can alleviate water maze impairments in rats treated with intracranial amyloid beta protein (Abeta); however it is unknown whether this effect is due to the cannabinoids' anti-inflammatory properties or whether it affects Abeta processing. Here we investigate whether cannabinoids have any effect on Alzheimer's disease in vivo. We found that HU210, a potent synthetic cannabinoid, did not improve water maze performance or a contextual fear conditioning task in an APP23/PS45 double transgenic mouse model of AD. HU210 had no effect on APP processing and Abeta generation, as well as neuritic plaque formation in the brains of AD transgenic mice. Our study showed that synthetic cannabinoid HU210 had no beneficial effects on AD neuropathology and behavioral deficits of AD model mice, which advises caution of such drug's application in AD therapies.

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<http://marianuniversityscienceblog.wordpress.com/2010/05/05/medical-use-of-marijuana-doesnt-actually-work/>

**Commentary:**

## Medical use of marijuana doesn't actually work?

May 5, 2010 Posted by Jill in [Health](#), [Medicine](#), [Policy](#), [Science & Culture](#).



Could this soon become a reality?

According to the *Washington Post*, the Washington D.C. Council has proposed a bill allowing doctors to legally recommend marijuana as a potential medicine for treating cognitive diseases like Alzheimer's disease, or coping with diseases such as cancer or HIV/AIDS. According to this law, doctors are not allowed to prescribe the use of marijuana because the substance is illegal, requiring their patients to acquire their marijuana from illegal sources or through one of the five to eight government-regulated dispensaries. Although doctors cannot prescribe marijuana, the dosage allowed for their patients, according to this law, states that patients can use the marijuana "until they decide they are, well, high enough. The exact dosage and means of delivery — as well as the sometimes perplexing process of obtaining a drug that remains illegal under federal law — will be left largely up to the patient. And that, Chopra said, upends the way doctors are used to dispensing medication, giving the strait-laced medical establishment a whiff of the freewheeling world of weed."

### **A new study questions these findings**

The use of medicinal marijuana is prescribed for Alzheimer's patients because previous studies have shown that HU210, which is a synthetic form of the cannabinoids found in marijuana, reduces the toxicity of plaques in the brain as well as promotes the growth of new neurons. A new study conducted by Dr. Weihong Song, Canada Research Chair in Alzheimer's Disease and a professor of psychiatry in the UBC Faculty of Medicine, was the first to test those findings using mice carrying human genetic mutations that cause Alzheimer's disease - widely considered to be a more accurate model for the disease in humans, rather than the previous study which exposed the HU210 compound to rats carrying amyloid protein, the toxin that forms plaques in the brains of Alzheimer's victims. The new study found that the mice treated

with the HU210 compound still had formation of amyloid plaques as well as the mice that were not treated with the synthetic compound, which brings up questions as to the validity of the use marijuana having medicinal value.

### **Questions of policy addressed**

Clearly, the medical benefits of using marijuana are still highly debated. So is it right that laws are being passed to use marijuana medicinally even though it is unclear what the effects of using marijuana are? Not to mention, if this law is passed, there will not be a restriction on how much marijuana that can be smoked, eaten, or vaporized for it is left up to the discretion of the patient. This idea goes against all logic and modern practices and policies regarding modern medicine. Doctors do not prescribe Vicodin for patients and let the patients determine how much they should take nor do they supply it at the patients demand. Doctors prescribe recommended amounts and only in small quantities for controlled, addictive substances because they are simply that, addictive, and the ability to obtain these prescriptions is still highly abused. If the use of medical marijuana is legalized in Washington D.C. according to the stipulations of the law currently, what will prevent the abuse of another addictive and misused drug? The full article covered by the *Washington Post* can be found [here](#).

The HU210 studies can be found in the journal *Current Alzheimer Research*