

Anti-Ageing Effects Of Cannabis Observed In The Brains Of Mice: Study

Recent research reveals that tetrahydrocannabinol (THC), the active compound in cannabis, shows potential as an anti-aging agent for the brain.

This effect may pave way for new treatments to preserve cognitive function with age.

Studies have shown that tetrahydrocannabinol (THC), the active chemical in cannabis, can serve as an effective remedy to cure the common symptoms of brain ageing in rats. This finding may open the door to strategies for preserving mental sharpness and cognitive function as we age.

This study was conducted by researchers from Germany and Israel, drawing on the rest of the studies relating to the endocannabinoid system and cannabinoid receptor type-1 (CB1), which revealed the working of the anti-ageing properties of THC through a signalling route that involves the mTOR protein controlling per se metabolome and cell metabolism.

According to a release by the German University of Bonn, [in a previous study](#), the Bonn researchers, together with a team from the Hebrew University of Jerusalem, were able to show that long-term, low-dose administration of tetrahydrocannabinol (THC), the active ingredient in cannabis, has an anti-ageing effect on the brain by restoring cognitive abilities and synapse density in old mice. Whether changes in mTOR signalling and the metabolome are linked to the positive effects on the ageing brain has remained an open question.

"We have now been able to show that treatment with THC has a tissue-dependent and dual effect on mTOR signalling and the metabolome," says Dr Andras Bilkei-Gorzo from the Institute of Molecular Psychiatry at the UKB, who is also a researcher at the University of Bonn.

Thus, THC treatment in the brain led to a transient increase in mTOR activity and levels of intermediates involved in energy production and amino acids. The latter enabled an increased synthesis of synaptic proteins and, thus, the formation of new synapses.

Unexpectedly, on the other hand, the Bonn researchers found a similarly strong reduction in the mTOR activity of mice in adipose tissue and in the content of amino acids and carbohydrate metabolites in blood plasma after a low-calorie diet or after intensive physical activity.

"We concluded that long-term THC treatment initially has a cognition-enhancing effect by increasing energy and synaptic protein production in the brain, followed by an anti-ageing effect by decreasing mTOR activity and metabolic processes in the periphery," says Bilkei-Gorzo. "Our study suggests that a dual effect on mTOR activity and the metabolome could be the basis for an effective anti-ageing and cognition-enhancing drug."

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