

Neurology: Neurochemistry, Neuropharmacology and Neurosciences

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Could vitamin E acetate oil be responsible for the marijuana/THC vaping illnesses?

Vitamin E oil which was found in marijuana and **tetrahydrocannabinol** (THC) vaping products has been a key focus of investigators looking into vape-associated illnesses. Human use of THC is usually via inhalation of cannabis combustion products (smoking) for its psycho-activity. Although cannabis is illegal at the federal level in the United States, products e.g. marijuana vape-pens are readily available for purchase on the Internet, at head shops, and dispensaries in states where medical or recreation cannabis is legal. Vaporizable THC were reported to cause stronger exposure by 4–30 times than regular marijuana smoking. Vitamin E is a dietary supplement that is used in some skin products but its health effects are not clear when inhaled alone or with THC. Some of the early pathological reports referred to the cause of EVALI as being external **lipoid pneumonia** while others found evidence that the lipoid macrophages are rather representative of inflammatory pneumonia. In this study we investigated the possibility that the illnesses are happening due in addition to the local effect on the lungs by central effect via cannabinoid receptors. In this study CB1 and CB2 binding affinities of THC, vitamin E acetate and their combination in concentrations similar to that present in marijuana vaping products were determined in vitro. Moreover, THC and vitamin E acetate bioavailability in the blood, brain, heart and lung of CD1 mice both males and females were determined after a single smoke exposure session that delivered 250ug/mL/mouse of THC. Our data showed on average between 20-40% less THC in the different tissues of the mice that inhaled from vaporizers with both THC and vitamin E in comparison to mice that inhaled from vaporizers with THC and propylene glycol which is another diluent commonly present in the nicotine smoking products.

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Biography

Mona H. Haron, PhD, Research Scientist, National Center for Natural Products Research, Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi, University, MS 38677, USA. Has experience in natural product **biological evaluation** of neuro-protective activities e.g. Asian ginseng. Also, biological evaluation of components derived from botanicals and the naturally occurring microbial communities associated with botanicals for immune function enhancement e.g. Echinacea purpurea and Mushrooms. Investigating pharmacological properties of medicinal plants and their phytochemical constituents with special interest in herb-herb and herb-drug interactions and safety of medicinal plants and **herbal supplements**.

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