## - Drug—physiological effect

## No, ingesting marijuana will not prevent Covid-19

Bangkok Post · 22 Feb 2022 · 4 · DR EVE GLAZIER & DR ELIZABETH KO Dr Eve Glazier is an internist and associate professor of medicine at UCLA Health. Dr Elizabeth Ko is an internist and assistant professor of medicine at UCLA Health.

DEAR DOCTORS: Please help us explain to our kids that using marijuana doesn't keep you from getting Covid-19. We're particularly focused on our two older sons, who are quoting a study that says it supposedly does, and who are in college in a state that just legalised recreational cannabis.



DEARREADER: The study your sons are referring to comes from researchers at Oregon State University's Lin us Pauling Institute. According to their findings, which were recently published in the Journal Of Nature Products, two compounds found in cannabis were effective at protecting cells from Sars-CoV-2, the virus that causes Covid-19. The study has generated an enormous amount of press, and small wonder. Imagine if it were indeed true that marijuana, which is also known as cannabis, wasthe answer to preventing Covid-19. Unfortunately for marijuana enthusiasts, that's not what this study is saying.

To understandwhy, let's start with cannabis. It's genus off lowering plants that contain hundreds of chemical compounds, including can nabinoids. One of these cannabinoid compounds is a psychoactive substance called tetrahydrocannabinol, or THC. When people talk about marijuana, they're referring to cannabis that contains THC and gives users the high they experience when they smoke or ingest the substance.

However, when it comes to this new research, THC is not the cannabinoid that is being discussed. Instead, the study focuses on two other compounds, cannabigerolic acid and cannabidiolic acid, which are shortened to CBGA and CBDA, respectively. They are abundant in hemp varietals of cannabis that do not have psychoactive properties. And while CBGA and CBDA are present in strains of cannabis referred to as marijuana, it's only in very small amounts.

In a search for a compound that can attack the coronavirus at the molecular level, the researchers had identified CBGA and CBDA. These cannabithe noids can bind to the distinctive spike protein on surface of the coronavirus, which it uses to breach cell membranes. That spike protein is the same structure that is targeted by vaccines and in antibody therapy. When something binds to the coronavirus spike protein in the right way, it disrupts the crucial pathway that the virus uses to infect cells. In subsequent lab tests, the researchers mixed CBGA and CBDA with kidney cells and coronavirus. They found that, when used in certain concentrations, the cannabinoids kept the virus from infecting the cells. The hemp extracts proved similarly effective when tested against several viral variants.

While the findings are both fascinating and potentially promising, the important words here are "lab test". That means the results have thus far been observed only in cultures growing in a petri dish in a laboratory. The road from a lab-based observation to a successful drug is long and arduous. This includes developing a targeted delivery system, animal experiments and the complex process of human clinical trials.

For those who may be hoping for antiviral results from the tiny amounts of CBGA and CBDA found in marijuana, it's helpful to know that heat from smoking, vaping or cooking destroys those two compounds. While CBGA and CBDA may someday play a role in preventing Covid-19, we are years away from a definitive answer.