

Study unravels mechanism behind cilantro's benefits



By [Ana Sandoiu](#) on July 26, 2019 — [Fact checked](#) by Carolyn Robertson

When it comes to some of the health benefits of cilantro, folk medicine had it right all along, and new research explains why. Scientists have unraveled the molecular underpinnings of cilantro's anticonvulsive effects.



New research explores the neurological benefits of cilantro.

As well as its taste and culinary flavor, cilantro — also known as coriander in the United Kingdom — may have significant health benefits and disease-fighting properties.

Historical records [show](#) that the plant has had medicinal uses since the time of Hippocrates, and traditional Ayurvedic Indian medicine has hailed the plant's benefits for digestion.

Modern medicine also supports some of cilantro's [benefits](#). Studies in mice have found that the plant *Coriandrum sativum* can reduce pain and [inflammation](#), and cell culture studies found that extracts from the herb can protect the skin against ultraviolet (UV) B radiation.

In addition to its antifungal and [antioxidant](#) properties, one study suggested that the spice can stop a potentially carcinogenic substance from forming in meat during high temperature cooking.

Finally, folk medicine has also hailed the anticonvulsive benefits of cilantro, while some [studies](#) in rodents confirm its antiseizure effects.

But, more research was necessary to untangle the mechanisms behind the effects that folk medicine and scientists described. Now, a new study looks at the molecular workings behind cilantro's anticonvulsant effects.

Geoff Abbott, Ph.D., professor of [physiology](#) and biophysics at the University of California Irvine School of Medicine is the principal investigator of the study, which appears in the [FASEB Journal](#).

How cilantro triggers potassium channels

Prof. Abbott and colleagues screened the metabolites of cilantro leaf and found that one in particular — the “long-chain fatty aldehyde (E)-2-dodecenal” —activates several [potassium](#) channels.

These potassium channels are part of the “[n]euronal voltage-gated potassium channel subfamily Q (KCNQ),” and researchers have known for a while that dysfunction in these channels can cause severe, treatment-resistant epileptic seizures.

Some of the KCNQs that the cilantro metabolite activates include the “predominant neuronal isoform” and the “predominant cardiac isoform,” which control electrical activity in the heart and brain.



binding site, and chemical experiments showed that the metabolite “recapitulated the anticonvulsant action of cilantro,” delaying seizures that the researchers induced with a substance called pentylenetetrazole.

“The results provide a molecular basis for the therapeutic actions of cilantro,” write the authors, adding that their findings “indicate that this ubiquitous culinary herb is surprisingly influential upon clinically important KCNQ channels.”

“We discovered that cilantro, which has been used as a traditional anticonvulsant medicine, activates a class of potassium channels in the brain to reduce seizure activity,” reports Prof. Abbott.

“Specifically, we found one component of cilantro, called dodecenal, binds to a specific part of the potassium channels to open them, reducing cellular excitability,” he explains.

“This specific discovery is important as it may lead to more effective use of cilantro as an anticonvulsant, or to modifications of dodecenal to develop safer and more effective anticonvulsant drugs.”

– Prof. Geoff Abbott

In the United States, there are [3.4 million](#) people living with [epilepsy](#), according to the most recent estimates from the Centers for Disease Control and Prevention (CDC).

“In addition to the anticonvulsant properties, cilantro also has reported anti-cancer, anti-inflammatory, antifungal, antibacterial, cardioprotective, gastric health, and analgesic effects,” concludes Prof. Abbott. “And, the best part is, it tastes good!”