

Magnolia Bark Compound can potentially help in Treatment of Drug-Resistant Epilepsy

A team of researchers have found a potential new treatment for epilepsy while exploring traditional Chinese medicine. Their report has been published in *ACS Chemical Neuroscience*.

Their research suggests that about 70% of patients with epilepsy can control it well with medication. But even when they work, the drugs can cause a range of side effects, from dizziness to mood disruptions. To look for new drug leads that could help patients who don't respond to conventional anti-seizure medications, Peter de Witte and colleagues turned to traditional Chinese medicine. The team collected 14 plants used in traditional Chinese medicine anti-seizure remedies. They then tested the plants' extracts in two types of zebrafish with epileptic-like seizures, one of which could respond to conventional anti-seizure medications, whereas the other type could not. Only extracts from the bark of *Magnolia officinalis*, a Chinese tree, reduced seizure-like behaviour in both types of



fish. In tests with mice, the researchers found that the magnolia bark's most potent anti-seizure compound, magnolol, reduced the rodents' otherwise drug-resistant seizures. Thus, compounds in magnolia bark provide a starting point for the development of treatments for resistant epilepsy, according to the researchers.

Study Suggests that a Cup of Tea Can Help Improve Brain Health

A recent study led by researchers from the National University of Singapore (NUS) revealed that regular tea drinkers have better-organized brain regions that can be associated with healthy cognitive function as compared to non-tea drinkers. The research team made this discovery after examining neuroimaging data of 36 older adults.

"Our results offer evidence of positive contribution of tea drinking to the brain structure, and suggest that drinking tea regularly has a protective effect against age-related decline in brain organization," explained team leader and Assistant Professor Feng Lei, Department of Psychological Medicine at the NUS Yong Loo Lin School of



Medicine. The research was carried out together with collaborators from the University of Essex and the University of Cambridge, and the findings were published in the journal *Aging*.

The research team recruited 36 adults aged 60 and above, and

gathered data about their health, lifestyle, and psychological well-being. The elderly participants also had to undergo neuropsychological tests and magnetic resonance imaging (MRI). The study was carried out from 2015 to 2018. Upon analyzing the participants' cognitive performance and imaging results, the research team found that individuals who consumed green tea, oolong tea, or black tea at least four times a week for about 25 years had brain regions that were interconnected more efficiently. He added, "We have shown in our studies that tea drinkers had better cognitive function as compared to non-tea drinkers."

Fatty Fish and Camelina Oil Are Beneficial for HDL and IDL Cholesterol

Camelina sativa oil and fatty fish are rich in polyunsaturated omega-3 fatty acids, but their health benefits seem to differ. A new study from the University of Eastern Finland shows that camelina sativa oil reduces the formation of fatty acid derivatives that are harmful to cardiovascular health. Camelina sativa oil also protects against oxidative stress. Fatty fish, on the other hand, increases the circulatory concentration of fatty acid derivatives that alleviate inflammation.

The study, conducted in collaboration between the University of Eastern Finland and Karolinska Institutet in Sweden, examined the associations of fatty and low-fat fish, and camelina sativa oil, with lipid metabolism and low-grade inflammation.

The 12-week study involved 79 men and women between 43 and 72 years of age who had impaired fasting glucose. The study participants were divided into four groups. One group replaced fats in their daily diet with camelina sativa oil and reduced their intake of fish to one serving a week. Two of the groups ate fish four times a week: two servings of fatty fish, and two servings of low-fat fish. The fourth group was a control group.

A high intake of omega-3 fatty acids from camelina sativa oil and fatty fish reduced the circulatory proportions of arachidonic acid. Results at the end



of the study suggested that using camelina sativa oil had lower concentrations of mediators derived from arachidonic acid, which may be harmful to cardiovascular health. Moreover, the intake of fatty fish increased the circulatory concentration of fatty acid derivatives that alleviate inflammation.

"Camelina sativa oil and fatty fish had a major effect on lipid metabolism. Our study shows that dietary fats can be used to target metabolic pathways that are linked to cardiovascular diseases and type 2 diabetes," says early-stage researcher Topi Meuronen from the University of Eastern Finland, the lead author of the article. In addition to its other beneficial effects, camelina sativa oil was also observed to reduce the circulatory concentration of markers that are indicative of oxidative stress.

Adult Stem Cell Study Shows Fish Oil Can Potentially Help with Depression

A recent study shows that patient-derived adult stem cells can be used to model major depressive disorder and test how a patient may respond to medication. The results of the study has been published in *Molecular Psychiatry*. Using stem cells from adults with a diagnosis of depression, the University of Illinois at Chicago researchers conducted the study. They also found that fish oil, when tested in the model, created an antidepressant response. UIC's Mark Rasenick, principal investigator of the study, says that the research provides several novel findings that can help scientists better understand how the brain



works and why some people respond to drug treatment for depression, while others experience limited benefits from antidepressant medication.

"It was important to find scientific evidence that fish oil may be an effective treatment for depression," said Rasenick, UIC distinguished professor of physiology and biophysics and psychiatry at the College of Medicine.

In the study, the UIC researchers used skin cells from adults with depression that were converted into stem cells and then directed those stem cells to develop into nerve cells. The skin biopsies were taken from two types of patients: people who previously responded to antidepressant treatment and people who have previously been resistant to antidepressants. When fish oil was tested, the models from treatment-sensitive and treatment-resistant patients both responded. "We saw that fish oil was acting partially on glial cells," said Rasenick, who is also a research career scientist at Jesse Brown VA Medical Center and president and

chief scientific officer at Pax Neuroscience, a UIC startup company. "Our study also showed that

a stem cell model can be used to study response to treatment and that fish oil as a treatment, or

companion to treatment, for depression," Rasenick said.

Black-Seed Oil Supports Healthy Blood Pressure

Supplementing standardized oil from black-seed significantly reduces blood pressure, suggests data from a small non-randomized clinical trial. The data has been published in *Food Science and Nutrition Research* indicates that six weeks of supplementation with 500mg of black-seed oil ThymoQuin reduces both systolic and diastolic blood pressure by over 10% in people with elevated blood pressure.

The study involved 19 volunteers with an average age of 55 years and average BMI of 29.6 and having a baseline resting blood pressure measuring between SBP 135-159 mmHg and DBP 85-99mmHg. All the participants were given 500mg of ThymoQuin 3% for first six weeks, which was then followed by a three week washout period and then again placebo was given for six weeks.

Results from the study showed that during the six week black-seed oil period, the participants experienced average decreases of 11.2% in SBP and



12.2% DBP. Increased heart rate was also reported during this period.

"This study demonstrated how ThymoQuin can help provide significant improvement towards healthy blood circulation measurements, which has not been seen from other more common varieties of black-seed oil," says Morris Zelkha, CEO of TriNutra.

Citrus and Olive Polyphenol for Healthy Heart

Eight weeks of supplementation with a combination of citrus flavones and flavanones and olive poly phenol led to improvements in markers of heart health, say Spanish Researchers. The data published in *Nutrients* showed that citrus-olive combination led to significant improvements in total cholesterol, LDL-C and oxidized-LDL levels as well as improvements in markers of inflammation.

The study used Citroven as the citrus-olive leaf extract. The researchers recruited 96 healthy volunteers to participate in their single-centre, randomized, double-blind controlled trial. Partic-



ipants were randomly assigned to consume either 2 capsules per day of either placebo or 500mg Citroven.

The results showed that, after eight weeks, flow-mediated vasodilatation increased by an average of 3% in the active group compared to 0.5% in the placebo group. In addition, blood lipid levels were also significantly improved with total cholesterol lev-

els decreasing by 13.57 mg/dL, compared to 6.38 mg/dL increase in placebo group. LDL and HDL cholesterol levels were also improved by -8.80 mg/dL and +1.65 mg/dL respectively while LDL levels increased and HDL levels decreased in placebo group. Oxidized-LDL was reduced by 342.84 pg/ml.

"This study shows that supplementation with a combination of citrus fruit extracts and olive leaf extract during eight weeks improved endothelial function, reduced blood pressure and lipid-metabolism parameters," said researchers.