

St John's Wort Protein Found to Suppress HIV in Lab

Temple researchers discover the anti-HIV properties of St. John's Wort while examining plant extracts from St. John's wort cultured in the laboratory to see if they had any effect on cell growth or the behavior of the brain cells in vitro. A novel protein, p27SJ, extracted from a callus culture of the St. John's wort plant (*Hypericum perforatum*) suppresses HIV-1 expression and inhibits its replication, according to researchers at Temple University School of Medicine's department of neuroscience and Center for Neurovirology (CNV), USA. Their findings, "p27SJ, a novel protein in St. John's wort, that suppresses expression of HIV-1 genome," have been published in the issue of *Gene Therapy*.

During that study, Kamel Khalili, Ph.D., director of CNV, professor and acting chair of Temple's department of neuroscience, and the study's lead author, said the researchers also looked to see whether the extracts that they had isolated from the callus culture had any anti-viral activity. They soon discovered that the plant extract inhibited HIV-1 gene expression and replication in infected cells. After identifying the protein, the group cloned the gene, which they realized was a novel protein and named p27SJ. The team then isolated the protein from the plant extract responsible for the observed anti-viral activity.

p27SJ has a unique characteristic and since it is



a plant protein, there is no similar protein to that in mammalian cells. After cloning the gene, the researchers then were able to identify the molecular mechanism by which the protein can suppress HIV-1 gene expression and replication, according to Khalili. "Our studies indicate that p27SJ can inhibit the expression of the HIV-1 gene by interacting with both cellular proteins and viral proteins. Since HIV-1 gene expression relies heavily on these factors, p27SJ can block viral replication by interfering with the proteins recruited by HIV-1 to increase viral gene expression," said Khalili.

Khalili strongly emphasized that the researchers do not know if the p27SJ protein they discovered is present in the St. John's wort preparations sold as a dietary supplement, and therefore, those tablets should not be considered as a treatment for patients infected with HIV-1.

Multiple Benefits of Valerian

Valerian root is derived from valerian (*Valeriana officinalis*). It is native to Europe and parts of Asia and now commonly found in North America as well.

The many benefits of Valerian include the following:

- Relieves Insomnia and Restless Sleep

Valerian is effective for insomnia and improves the overall quality of sleep. For insomnia, many studies have used between 400 milligrams and 900 milligrams of valerian about 30 minutes before



bedtime. If needed, the dose can gradually be increased to about 1,500 milligrams.

- Soothes Anxiety and Nervous Tension

Scientists have discovered that valerian root increases the

amount of a naturally occurring gamma-aminobutyric acid (GABA) in the brain. GABA helps regulate nerve cells and has a sedative effect. Besides, the valerianic acid in valerian inhibits an enzyme that destroys GABA, thus boosting GABA levels and further promoting relaxation.

- Helps in Stress Management

Valerian is a very helpful herb for getting through stressful times. Its capacity to improve the quality of sleep in combination with its support of healthy levels of GABA and serotonin keeps

nervous system resilient and calm and protects from stress.

- Lowers Blood Pressure

Valerian naturally balances blood pressure and keeps it at a healthy level.

- Relaxes Tense Muscles and Relieves Cramping

Valerian root is a natural

muscle relaxant and anti-spasmodic therefore it reduces the severity and discomfort of any type of muscle tension, spasms, or cramps, including menstrual cramps.

- Eases Menopausal Symptoms

Women going through the hormonal ups and downs, and

mood swings associated with menopause may also experience relief by taking valerian.

Unlike many prescription sleeping pills, valerian has no dangerous side effects and as long as the last dose is at least 3-4 hours before wakeup time, it will not cause morning drowsiness.

Omega-3 Supplements for Dry Eye

Research suggests that taking an omega-3 fatty acid supplement can reduce symptoms of dry eyes. Omega-3 supplements are safe for most healthy adults and generally have few side-effects when taken in a standard dose. Before taking a supplement, however, one should consult a health care provider.

To maintain eye comfort and good vision, the front surface of the eye must be covered with an even layer of tears that contains the right mix of water and oils. If tears are not of sufficient quantity or quality to maintain that layer, dry eye disease can develop. In recent years, fish oil has been suggested as a possible remedy for dry eyes. Fish oil



contains two omega-3 fatty acids called docosahexaenoic acid, or DHA, and eicosapentaenoic acid, or EPA. Omega-3 fatty acids are thought to provide a wide range of health benefits. Research studies looking into the benefits of omega-3 fatty acid supplements have found fewer dry eye symptoms in people who take the supplement. It appears that omega-3

fatty acids can improve the eye's oil film that's produced by small glands on the edge of the eyelid, called the meibomian glands. That improves dry eye symptoms and reduces the need for artificial tears.

The dose of omega-3 fatty acid in many of the research studies included 180 milligrams of eicosapentaenoic acid and 120 milligrams of docosahexaenoic acid, taken twice a day. High doses of the supplement have been associated with harmful effects that, include an increased bleeding risk, higher levels of low-density lipoprotein (LDL, or "bad") cholesterol, blood sugar control problems, and a fishy aftertaste or odor.

Ginseng Reduces Insulin Resistance

Ginseng has been attributed to anti-diabetic properties and is commonly used in the prevention and treatment of type 2 diabetes.

Previous yet separate studies have found ginseng to significantly reduce insulin resistance and improve glucose control in both diabetic mice and obese mice. Panax ginseng berry extract in both 200mg and 400mg doses has been previously studied in humans leading to reductions in blood glucose. Steroid glycosides, known as ginsenosides, from Panax ginseng are believed to contribute to the anti-diabetic effects of the herb. Gao Y et al. propose ginsenoside Re reduces insulin resistance



through activation of PPAR- γ pathway and inhibition of TNF- α production.

Researchers cultured murine 3T3-L1 adipocytes to determine the potential mechanism of action of the ginsenoside Re at the molecular level. The effect of ginsenoside was examined by measuring the concentration level of triglycerides in the 3T3-L1 cells. When the researchers treated the 3T3-L1 cells with different concentrations of ginsenoside Re for 8 days, they found a substantial increase in triglyceride concentrations. Following doses of 10 μ M, 30 μ M, and 100 μ M of ginsenoside RE, triglyceride levels increased 23%, 29% and 22% respectively compared to the control group. Following the 8 day treatment with ginsenoside Re, increased glucose uptake was reported. Compared to control, 30 μ M ginsenoside Re increased PPAR- γ 2 expression by 4.6 fold whereas 3 μ M of

troglitazone only increased PPAR- γ 2 expression by 1.8 fold. Goa et al expand the significance of this reduction by explaining that ginsenoside Re's inhibition of an inflammatory production of TNF- α leads to improved insulin signaling. However, Gao and colleagues concluded, "Ginsenoside Re-activated PPAR- γ nuclear receptor through directly increasing expressions of PPAR- γ 2 and its targeting genes." The other results found by these researchers support the beneficial effects of ginsenosides giving validity to the use of ginseng in traditional Chinese medicine for the prevention and treatment of diabetes. The study results have been published in the *Journal of Ethnopharmacology*.

Daily Intake of Asafoetida Water Keeps Bad Health Away

Asafoetida is widely used across the Indian sub-continent as a food flavoring agent, but in some countries like India and Nepal, it used for medicinal purposes too. In ancient times, hing was mixed in water and consumed by women as a contraceptive measure, while others used it for ailing indigestion. In several regions, hing paste cures cold and flu; it is also sometimes used for curing asthma. According to Ayurveda, drinking a glass of lukewarm water with a pinch of hing added to it daily is beneficial in the following ways:

- Hing water has anti-inflammatory properties, which fixes digestion related problems and cures acidity instantly.
- It keeps blood sugar level in control and prevents diabetes.



- When asafoetida is boiled in water, it produces diuretic properties, which cleanses bladder and kidney and protects against any urinary infection.
- Drinking it daily strengthens the bones.
- Hing contains beta carotene, which helps in eye care and keeps eye healthy and hydrated.
- Asafetida protects body against anemia, makes teeth stronger and has anti-carcinogenic elements, which prevents cancer.
- It is anti-inflammatory and can prevent wrinkles and aging of the skin.
- Asafoetida also helps in regulating mood and elevate stress

Positive Effects of Garlic on the Heart

Garlic is a good source of Vitamins C and B6, involved in regulating blood metabolism and promoting a functioning nervous system, as well as minerals including zinc, magnesium, and selenium, which assist in brain and nerve health.

In recent times, studies have linked garlic to improved blood pressure and cholesterol levels. An updated meta-analysis (a technique that combines the results from multiple studies) and review of the effects of garlic on blood pressure found that gar-

lic supplements were effective in lowering blood pressure in people with hypertension (high blood pressure). The review also observed other cardiovascular protective effects including modest reductions in total serum and LDL cholesterol ('bad' cholesterol) levels.

Increased blood pressure and cholesterol levels are two factors that contribute to poor heart health. Increasing garlic intake a safe and simple way to promote a stronger, healthier heart.