

Berberine

Berberine is a plant metabolite, a naturally occurring isoquinoline alkaloid, has a long history in traditional Chinese medicine, and shows significant anti-inflammatory, antioxidant, anti-apoptotic, anti-diabetic, antimicrobial, and anti-autophagic activity through various signaling pathways in the body in clinical studies.

The best-established mechanism is activation of AMPK (AMP-activated protein kinase). AMPK is a natural enzyme that tells cells to use glucose more efficiently, burn stored fat for energy, make less glucose in the liver, improve insulin sensitivity, and increase energy production. Berberine is being studied for treatment of non-alcoholic liver disease, as it reduces hepatic fat content, improves liver enzymes, lipid profiles, and insulin sensitivity. Berberine has been shown to modulate the renin-angiotensin system (RAS), delaying the onset and progression of hypertension and inhibiting inflammatory cytokines.

A recent study was performed on women with PCOS using Berberine supplementation. Results of the study showed a statistically significant decrease in HOMA, CRP, TNF- α , Triglycerides, testosterone, Body Mass Index (BMI), Visceral Adipose Tissue (VAT), fat mass, GAGS and CADI scores after 60 days of two 550mg doses per day.

In a systematic review of randomized clinical trials, Berberine has been shown to favorably modulate gut microbial composition across multiple clinical populations, concurrently with cardiometabolic and anti-inflammatory improvements.

Ceylon cinnamon

Often called “true” cinnamon, Ceylon cinnamon differs from Cassia cinnamon in price, quality, and chemical composition. Ceylon offers a significantly lower coumarin amount, making it a safer option for daily use. Often used in Ayurvedic and Holistic practices, Ceylon cinnamon contains anti-diabetic, antibacterial, antioxidant, and anti-inflammatory properties. Clinical studies have shown that cinnamon had a moderate reduction effect on HbA1C levels, a significant reduction in LDL levels and both systolic and diastolic blood pressure, and a moderate reduction in BMI.

Ceylon cinnamon may also improve intestinal absorption of berberine in supplementation.

The daily effective dose range of Berberine is 1200-1500mg daily, divided into 3 doses or 400-600mg 2-3x daily.

Most studies report only mild side effects, such as constipation, diarrhea, gas, and nausea.

Consult with your primary care physician before use, as Berberine supplementation can interact with certain medications such as (but not limited to) blood thinners, statins, and diabetes drugs.

Clinical References for Berberine & Cinnamon:

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