



# BERBERINE HCl

CLEAN BERBERINE HCl POWDER



## Berberine as a Natural Alternative for Reproductive Health & Blood Sugar Support

**Today, more and more individuals** are seeking natural ways to improve their overall health. Natural extracts have been used for centuries in traditional Chinese medicine for their beneficial effects on whole body wellness, including reproductive health and blood sugar levels. Modern research has continued to show the benefits of many of these natural extracts, including berberine.

Berberine is an alkaloid that is derived from several plant species, including the goldenseal, Oregon grape, barberry, coptis, and tree turmeric plants.<sup>1</sup> Its multifaceted roles in digestive health have made berberine a staple within traditional Chinese medicine, Ayurvedic medicine, and Native American healing.

Berberine is a small alkaloid compound that exhibits potent health benefits throughout the body. Berberine directly targets metabolism by activating an enzyme called AMP-activated protein kinase (AMPK), which is found in the brain, muscle, kidney, heart, and liver.<sup>2,3</sup>

The latest clinical research suggests that berberine may act through several different mechanisms to support weight management. For instance, berberine may play an important role in supporting healthy blood sugar levels in individuals with hard-to-control blood sugar.<sup>4</sup>

Firstly, it may help blood glucose to effectively reach the inside of cells by improving insulin response. This is important because uncontrollably high blood sugars often occur due to insulin resistance.<sup>5</sup> Berberine may also support glycolysis, the main pathway responsible for sugar breakdown. On the other end of the spectrum, berberine may reduce the production of sugar within the liver, the body's main carbohydrate storage center.

Through these potential mechanisms, scientists have found significant improvements in blood sugar levels when individuals with hard-to-control blood sugar supplement with berberine. A review of several clinical studies found a significant improvement in a 3-month blood-sugar marker called HbA1c when patients supplemented lifestyle changes with berberine.<sup>6</sup>

These researchers found that the HbA1c-lowering effects of berberine were similar to other blood-sugar-lowering therapies.

Another study that examined the effects of daily supplementation with one gram of berberine in 116 patients with hard-to-control blood sugars found that fasting blood sugars were lowered by 20%.<sup>7</sup> In this study, participant's HbA1c was significantly reduced from an average of 7.5 to 6.6 after supplementing with berberine.

Another study reviewed the efficacy of berberine in comparison to several oral glucose-regulating medications and found that berberine may be as effective as some standard glucose control therapies.<sup>8</sup> For example, metformin is a popular glucose-regulating medication that is often used as an initial option for those who have difficulty managing blood sugar levels. When berberine was compared with metformin in these patients, scientists found that both therapies similarly improved HbA1c, blood sugar, and fat (triglyceride) levels.<sup>9</sup>

Berberine is also unique in that it may optimize cholesterol and triglyceride levels. By targeting metabolic pathways, berberine plays an important role in supporting healthy cholesterol levels. The latest research suggests that one potential mode of action is by inhibiting a major enzyme called PCSK9, which helps to clear out "bad" cholesterol called low-density lipoprotein (LDL).<sup>10, 11, 12</sup> This mechanism is similar to certain popular cholesterol management pharmaceuticals. One study reviewed the comprehensive effects that berberine exerts on fat regulation. These researchers found that berberine had a positive effect on total cholesterol, "bad" cholesterol (low-density lipoprotein), and blood triglycerides.<sup>13</sup> Additionally, this study found that berberine significantly improved "good" cholesterol (high-density lipoprotein) levels. Another study found that berberine significantly reduced Apolipoprotein B (ApoB), an important predictor of cardiovascular health.<sup>14</sup>

Berberine also shows promise as a powerful reproductive health-boosting supplement. Women who have irregular periods, facial hair growth, difficulty conceiving,



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and difficulty maintaining a healthy weight may also suffer from insulin resistance.<sup>15</sup> Research studies have linked berberine supplementation with decreased levels of insulin resistance.<sup>16</sup> In this way, berberine may offer natural weight management support in women who suffer from reproductive health issues that influence metabolism.

A deeper dive into the studies indicates that there may also be a potential role for berberine in regulating testosterone levels and other hormones in individuals with dysregulated reproductive hormones. One study that examined the effects of berberine supplementation in individuals with high testosterone-related reproductive health issues found significantly reduced levels of testosterone and improved luteinizing hormone to follicular stimulating hormone ratios.<sup>16</sup>

Overall, berberine is a powerful natural supplement that may support the mechanisms that control blood sugar and fat levels within the body. Through these roles, berberine may offer weight-loss support and may be especially beneficial as a total-body supplement for individuals who are suffering from reproductive health conditions.

## About Himalayan Berberine HCl

Himalayan Berberine HCl is wildcrafted from the roots of the *Berberis aristata* shrub. The roots are sustainably sourced from different parts of the Himalayan mountains to ensure that any one area is not over harvested.

By closing off the area for a few years and harvesting in a specific way, it enables the roots to regrow, and the plant is given a chance to flourish in the wild.

The plant is exposed to natural stressors in the environment, making it more resilient, and thus, providing better quality nutrients and active ingredients. Manufactured using a proprietary water extraction process, Himalayan Berberine HCl is a clean extract with minimum 97% purity.

**Study coming in 2022.**

## References

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