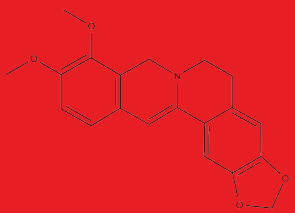




GLUCO VANTAGE®

The Super Berberine™



GlucoVantage® (Dihydroberberine)

- Clinical Proven & Patented
- More Bioavailable
- Only Requires 1/3 the Dose
- Enjoy More Carbs
- Gut-Friendly

GlucoVantage® is the first commercially available brand of Dihydroberberine (DHB), which is a patented active metabolite of berberine.

Berberine has been shown to optimize blood sugar, improving insulin sensitivity and body composition. Dihydroberberine solves berberine's limitations of low bioavailability and GI distress.



BENEFITS

- Versus berberine, DHB has shown to be up to:
 - › 5x more bioavailable/absorbable
 - › 2x longer-lasting (8 hours vs. 4 hours)
- Improves insulin sensitivity and carbohydrate tolerance, supporting healthy blood glucose levels
- Supports body composition via AMPK, preferentially driving carbohydrates to muscle rather than fat
- Anti-aging support by reducing glycation end-products correlated with biological aging
- Reduced GI distress compared to berberine due to DHB being the gut's active metabolite
- Ketogenic-friendly by increasing plasma BHB (ketones)

PRODUCT CATEGORIES

- Stimulant-Free Weight Loss / Fat Burners
- Blood Sugar Optimization / Glucose Disposal Agents
- Ketogenic and Low-Carb Supplements
- Anti-Aging & Gut Health

How To Use

2	100 - 150 mg	Before Meals
Servings per day	Per serving	Timing
Topical application may have added benefits		

Suggested Stacks

May have synergy when co-administered with probiotics, exogenous ketones, and/or MCTs (e.g. GoBHB® & C8Vantage™)

OUR ADVANTAGES

Highly bioavailable form of berberine
(up to 5x more effective)

Clinically proven 20x greater AUC

Less potential GI distress than berberine

Requires 1/3 the mg dose of berberine

Non-GMO and derived from natural berberine

More Insulin Sensitivity, Glucose Disposal

Patented Ingredient (US 2017 / 0296520 A1)

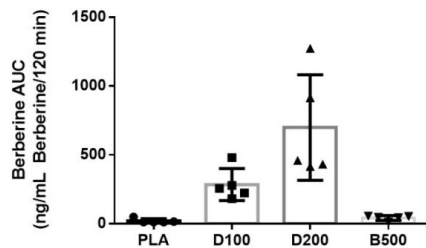
Dihydroberberine (DHB) is the highly active metabolite of berberine. Berberine must be broken down in the gut and converted to DHB before becoming biologically active. GlucoVantage bypasses this rate-limiting step.

Supplementation with DHB mitigates potential GI distress that some individuals experience with berberine, likely the result of poor absorption and/or microbial reduction.

GLUCOVANTAGE® BY THE NUMBERS

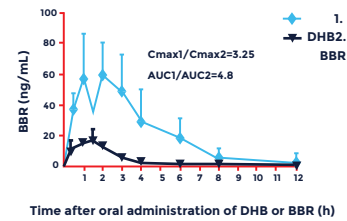
Superior Bioavailability

- A recent clinical trial proved that 200 mg of GlucoVantage® exhibited a 20x greater AUC than 500 mg of berberine.
- The results of NNB's human clinical study on GlucoVantage® (dihydroberberine) elucidated that
 - Berberine AUC value in D200 was 46 times greater than PLA
 - Berberine AUC value in D100 was 6.72 greater than B500
 - Berberine AUC value in D200 was 22 times greater than B500
- Research has shown that DHB displays significantly improved absorption and enhanced bioavailability relative to berberine. Animal data shows a 5-fold relative increase in absorption rate (DHB > berberine).^[1]
- Furthermore, topical application of DHB resulted in a 7-fold higher bioavailability compared to oral berberine in animal models.^[2]



Individual and aggregated mean values for berberine AUC by condition

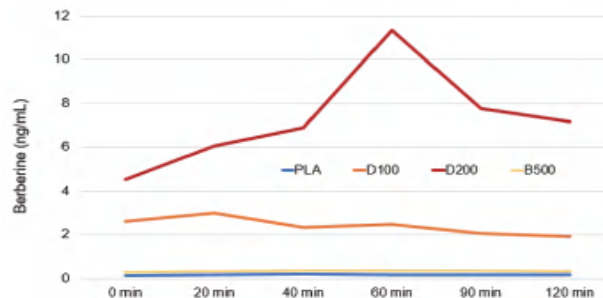
Note^[5]:
AUC: area under the curve
PLA: placebo (resistance dextrin)
B500: 500 mg dose of berberine
D100: 100 mg dose of dihydroberberine
D200: 200 mg dose of dihydroberberine



Berberine Area Under the Curve

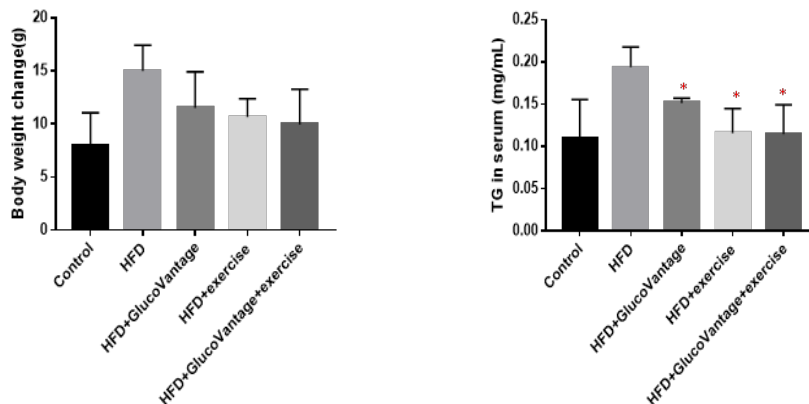
Improving Insulin Sensitivity

- DHB can reduce adiposity and improve glucos tolerance in mice fed a high-fat diet . To achieve similar effects, berberine needed to be administered at a dose almost 4 times that of DHB.^[3]



The anti-obesity effect of GlucoVantage®

- The study aimed to study the obesity-inhibiting effect of GlucoVantage combined with exercise on mice with high fat diets. The results showed significant differences compared with the high-fat group. Compared with HFD, GlucoVantage or combined with exercise serum TG showed significant difference, indicating that GlucoVantage has the effect of inhibiting obesity.



Reducing Fat and Improving Glucose Tolerance

- DHB has been shown to display markedly improved in vivo efficacy (compared to berberine) in terms of counteracting adiposity, tissue fat gain, and insulin resistance in rodents via increased AMPK activity, which also improves insulin sensitivity. These enhanced effects are likely due to enhanced oral bioavailability.^[3]

SEE THE DIFFERENCE



“Standard”
Berberine

GlucoVantage®
Dihydroberberine

* Based upon total daily dosing

REGULATORY

GlucoVantage® is sourced from berberis aristata.

Dihydroberberine has also been identified in plants such as Phellodetri Chinese Cortex (Huáng bai).^[4]

**GLUCO
VANTAGE®**

References

- [1] Feng R, Shou J, et al. Scientific Reports, 5:12155.
- [2] Buchanan B, et al. PLOS One 2018 Mar; 13(3).
- [3] Turner N, et al. Diabetes, 2008, 57(5):1414-1418.
- [4] Tan L, et al. Int Immunopharmacol. 2019; 75.
- [5] Moon JM, Ratliff KM, Hagele AM, Stecker RA, Mumford PW, Kerksick CM. Absorption Kinetics of Berberine and Dihydroberberine and Their Impact on Glycemia: A Randomized, Controlled, Crossover Pilot Trial. Nutrients. 2021;14(1):124. Published 2021 Dec 28. doi:10.3390/nu14010124IF: 5.9 Q1

NNB We Create Ingredients

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