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GlucoVantage Dihydroberberine Beats Berberine in Human Trial

Published on November 30, 2023 by [Mike Roberto](#) and Drew Schibsted | [No Comments](#)

*Long-awaited **human** clinical data has been published on **dihydroberberine**,^[1] the superior form of berberine sold as GlucoVantage by NNB Nutrition!*

Spend five minutes researching weight loss supplements, and you're bound to read about **berberine**. This is a natural plant alkaloid that exerts powerful anti-diabetic effects^[2,3] that have been repeatedly shown to lead to healthy weight loss.^[4,5] It's even outperformed anti-diabetic drugs like *metformin* in controlled research trials.^[6]

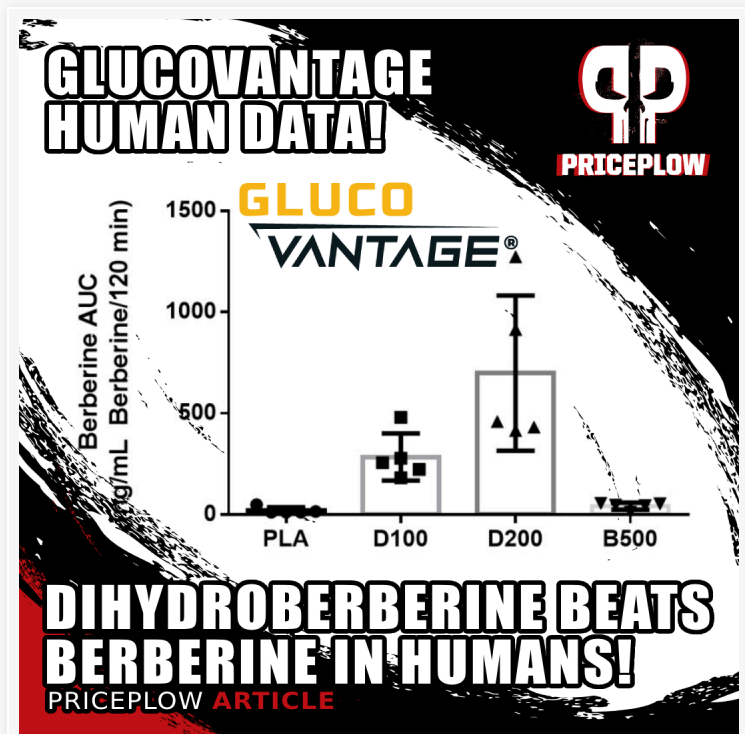
Is Dihydroberberine Really Superior to Normal Berberine?

We originally covered it in an article titled [Berberine: The Best Glucose Disposal Ingredient Just Got Better](#), zeroing in on its metabolite [dihydroberberine](#), which animal research shows is [5X more bioavailable](#) than regular berberine.^[7]

It's impossible not to be impressed by berberine's wealth of research, and the effects of *dihydroberberine* (sold as *GlucoVantage* by NNB Nutrition) shown in preclinical research trials are even *more* impressive.

There's only one problem: *berberine* has human data, while, for years, *dihydroberberine* did not. We put the emphasis on the *past tense* there, because there's now *human* data using dihydroberberine, specifically with **GlucoVantage**:

Better Berberine Bioavailability: New Human Data on GlucoVantage



Not sure how we missed this one, but a study published in early 2022 showed that NNB Nutrition's GlucoVantage dihydroberberine outperformed *higher* doses of normal berberine in elevating plasma berberine and reducing blood sugar and insulin levels!



berberine



...the superior bioavailability of GlucoVantage dihydroberberine (DHB) was partly theoretical – demonstrated by *in vitro* and *animal* data,^[7] but not in humans.

It turns out that we missed a crucial study in January 2022, but we're excited to cover it today: Published in *Nutrients*, it shows some excellent *human data* showing the benefits of GlucoVantage.^[1]

GlucoVantage dihydroberberine human study methods

In this *randomized, double-blind, crossover* study in five healthy young men, the subjects took four doses *total* of either 500 milligram berberine (B500), 200 milligram dihydroberberine (D200), or 100 milligram dihydroberberine (D100). While this isn't the largest study by any means, it serves as a great "pilot study" of sorts, and was *still* able to achieve statistical significance, as you'll see below.



The berberine or dihydroberberine / DHB was administered in *three* separate doses, with breakfast, lunch, and dinner, on the same day. Subjects then underwent an overnight fast before receiving their fourth dose alongside a standardized test meal upon arrival to the research lab.

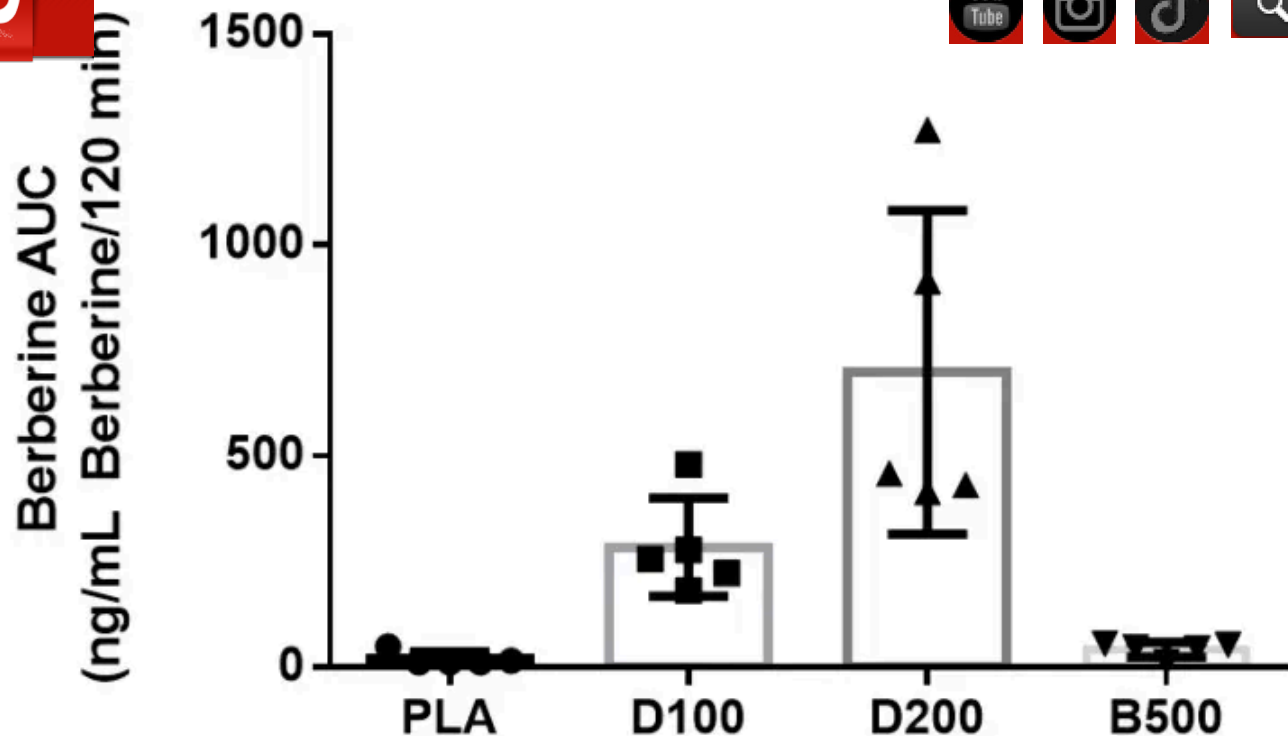
Note carefully the doses used – compared to the berberine, subjects took only 40% or 20% as much dihydroberberine.

Venous blood samples were obtained at 0, 20, 40, 60, 90, and 120 minutes post-ingestion. Analysis focused on serum berberine concentrations, glucose levels, and insulin levels. Peak concentration and area under the curve were computed for all variables.

Area under the curve (AUC) is a mathematical technique for measuring the *total* effect of a

drug. For you math nerds out there, AUC is the *integral* of the serum drug concentration as a function of time.

GlucoVantage dihydroberberine human study results



There was a lot of individual variance in dihydroberberine effectiveness in the high-dose DHB test, but it's clear that DHB supplementation is vastly more effective at increasing serum berberine levels. D100 = 100 mg DHB, D200 = 200 mg DHB, B500 = 500 mg berberine. ng/mL = nanograms per milliliter of blood.^[1]

The results were striking. Compared to 500 milligram berberine, the 200 milligram **dihydroberberine** caused a **22-times greater serum concentration of berberine**! [5] That's downright incredible -- the huge pharmacokinetic advantage of DHB is on prominent display here.

However, 22-times more berberine in the blood didn't lead to 22-times less insulin or glucose – the advantage here was more modest, but still significant. The D200 treatment caused about a 2.5% reduction in insulin AUC, and a 1% reduction in glucose AUC.^[1] This may not sound like a lot, but in the long run, it can have a *major* impact on metabolic health.

Large variation: gut health could still be a factor

And again, look at the variance – the average glucose AUC was 11,898 *plus or minus* 2058, which means at least one member of the group had an insulin AUC as low as 9,840 mg/dL*120 min. The lowest observed value in the berberine 500 milligram group was 11,835 – much higher, and here, *lower is better*. The lower the glucose AUC, the more efficiently postprandial glucose was disposed of.

So why such a wide range of values in the DHB treatments? Everything in biology is individual – some people probably respond to DHB better than others. In our article discussing [*dihydroberberine's 5X greater bioavailability*](#) in animals, we posit that gut health still plays a major role.

Another explanation is the relatively small sample size of five participants, which opens the door to random variation (statistical noise) playing a significant role in the observations. *As always*, more research on more types of individuals is always needed.



Glucose – Our Preferred DHB

...study had a small sample size, it still showed the incredibly impressive effects of dihydroberberine, and in *humans*. Given that it turns back *into* berberine in plasma, only with *more*, we're confident in saying that the *best* berberine ingredient on the supplement market is **GlucoVantage** from **NNB Nutrition**.

GlucoVantage is 100% non-GMO dihydroberberine sourced from *Berberis aristata*. This patented formulation,^[8] obtained directly from pure berberine by NNB, is the gold standard for glucose disposal products. With GlucoVantage, NNB Nutrition guarantees purity, devoid of adulteration or spiking, with transparent third party lab test results for supplement formulators.

Learn more in our series of berberine articles

If you're interested in learning more, check out the articles linked in the introduction regarding [berberine](#), [dihydroberberine](#) specifically, and our deep-dive in the [5X bioavailability](#) study.

Even more recently, we wrote about another one of berberine's mechanisms of action as a *glucagon-like peptide-1 (GLP-1) agonist* in our post titled [Is Berberine Nature's Ozempic? A Look at GLP-1 Agonists](#). There's so much this ingredient can do!

Area under the curve (AUC) and maximum concentration (C_{Max}) for berberine, insulin, and glucose.

Berberine	AUC (ng/mL × 120 min)	C _{Max} (ng/mL)
PLA	20.2 ± 16.2	0.22 ± 0.18
B500	42.3 ± 17.6	0.40 ± 0.17
D100	284.2 ± 115.9	3.8 ± 1.4
D200	929 ± 694	12.0 ± 10.1
<i>p</i>	0.045	0.06

Insulin	AUC (μIU/mL × 120 min)	C _{Max} (μIU/mL)
PLA	8260 ± 420	110.6 ± 24.3
B500	7429 ± 1519	99.1 ± 6.6
D100	8502 ± 717	107.2 ± 21.4
D200	7242 ± 1263	98.1 ± 3.4
<i>p</i>	0.22	0.36

Glucose	AUC (mg/dL × 120 min)	C _{Max} (mg/dL)
PLA	12,199 ± 1602	146.2 ± 13.9
B500	12,029 ± 194	139.4 ± 32.8
D100	12,381 ± 1128	140.8 ± 8.8
D200	11,898 ± 2058	139.0 ± 16.6
<i>p</i>	0.92	0.77

Both the 100 mg and 200 mg doses of dihydroberberine were vastly more effective than 500 mg regular berberine at increasing serum berberine concentrations. D200 improved insulin signaling just as much as the 2.5x larger dose of berberine. The D200 dose also improved glucose disposal more than the 500 mg berberine!^[1]



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Is Berberine "Nature's Ozempic"? We take a look at their mechanisms as GLP-1 agonists, and answer, "Yes, somewhat."

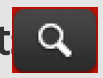
Conclusion: Dihydroberberine has even more data

The bottom line is that, even with such a small sample size, the pharmacokinetic advantage of GlucoVantage DHB seems obvious. We'd love to see this study replicated with a much larger group. We're confident that under those conditions, DHB's greater ability to affect insulin signaling and glucose disposal would be extremely apparent.

If you're interested in trying a GlucoVantage-based supplement, you can see price listings on [Alpha Lion's GlucoVantage](#) below, and after that, sign up for our NNB Nutrition news alerts:



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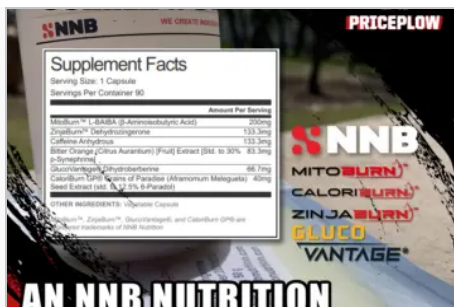
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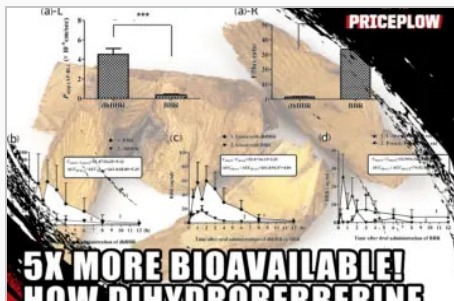
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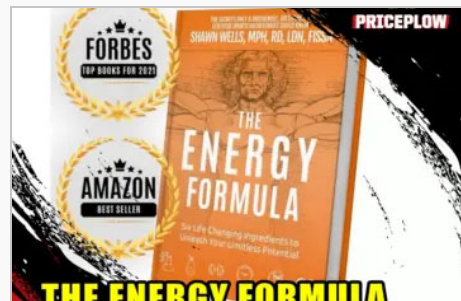
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5x More Bioavailable: Why
Dihydroberberine is "The
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About the Author: Mike Roberto



Vitamin A diet.

Mike Roberto is a research scientist and water sports athlete who founded PricePLOW. He is an n=1 diet experimenter with extensive experience in supplementation and dietary modification, whose personal expertise stems from several experiments done on himself while sharing lab tests.

Mike's goal is to bridge the gap between nutritional research scientists and non-academics who seek to better their health in a system that has catastrophically failed the public. Mike is currently experimenting with a *low*

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