



Fullscript-tested

# Assessing berberine potency

At Fullscript, we're committed to independently testing products we distribute to provide quality assurance and validate important safety and efficacy label claims.

As part of our commitment to quality, we selected berberine products distributed by Fullscript to test for potency claims. Based on US and Canadian industry guidelines, Fullscript's Medical Advisory Team defined a berberine or berberine HCl content of **100% or more** of label claims as the qualifying benchmark for quality confirmation.

Learn more about [Fullscript's commitment to quality](#).

Berberine is one of many isoquinoline alkaloids in several plants, including *Berberis vulgaris* (barberry) and *Hydrastis canadensis* (goldenseal). Berberine ingredient forms include berberine HCl and more bioavailable options like berberine phytosome and dihydroberberine (DHB). Phytosome technology combines berberine with phospholipids, creating a lipid-friendly complex that enhances absorption. Studies show that berberine phytosome may achieve therapeutic plasma levels at a lower dose, providing similar or superior efficacy to standard berberine HCl formulations. DHB is a metabolically active berberine derivative that offers enhanced bioavailability via metabolic conversion. DHB has more established research supporting its bioavailability and metabolic benefits, while Berbevis is newer, with early studies showing promising results but requiring further validation in clinical trials.

Relying on evidence-based practices, some healthcare providers have used supplements containing berberine to support patients receiving whole person treatments for gastrointestinal health, blood sugar support, and other health concerns. However, education and awareness are needed to highlight recent quality concerns related to contamination, potency, and adulteration of berberine supplements.





## Potency

The quantity of berberine in products can vary greatly. This variability can be due to differences in where and how the plants are grown, when they're harvested, and the methods used to extract berberine. (Lan 2014) If a berberine product is less potent than needed, it might not be effective. Conversely, excessively potent products carry a higher potential for side effects or harm. (Neag 2018)

Some berberine products might not contain the labeled amount per serving. In a 2023 report on 33 Amazon and Walmart berberine products purchased online, supplement brand NOW Foods found that 18 contained less than 40% of the claimed potency. Seven products had 1% or less of the label claim.

**54.5%**

of berberine products obtained online from Amazon and Walmart contained less than 40% of the label claims

## Adulteration

Because of the high cost and limited supply of raw materials, manufacturers sometimes substitute berberine with cheaper, ineffective ingredients. (Singh 2019) This not only misleads providers and patients but can also introduce health risks if the substitutes are harmful.

To avoid these risks, consumers should purchase berberine from reputable sources that provide independent third-party testing results confirming the product's purity and potency. Products should also comply with current Good Manufacturing Practices (cGMPs) to ensure quality.

## Testing

We tested berberine products via Alkemist Labs for potency label claims using a 100% methanol extraction method via high-performance liquid chromatography (HPLC). HPLC is considered the gold standard for determining the potency of finished berberine products. The United States Pharmacopeia (USP) monograph for berberine includes sample preparation for proper extraction and preparation methods to isolate berberine. The USP monograph also contains specific details on aspects of the HPLC column, mobile phase, and flow rate.

**112.9%**

Average percentage of berberine content compared to label claims for Fullscript-tested products

Some overage of primary ingredients is necessary for product shelf life. The US Food and Drug Administration (FDA) mandates that dietary supplements meet label claims until expiration. Manufacturers, therefore, add extra ingredient amounts to ensure compliance. Delivery formats with less integrity, such as gummies and liquids, lose potency faster and require additional overage amounts.

# Featured Fullscript-tested products

The Fullscript catalog experience will soon allow you to filter quality-tested products. The following are featured high-quality products that meet Fullscript’s purity standards.

Brand	SKU	Product	Results
Integrative Therapeutics	<a href="#">ITI-15064</a>	Berberine 500 mg	119.6%
Thorne	<a href="#">THO-SF800</a>	Berberine	118%
Xymogen	<a href="#">XY-300095624</a>	Berberine ES-5	111.5%
SFI Health	<a href="#">KLP-BER</a>	Berberine	102.4%

## References

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