



**Sunpure Extracts**  
Private Limited



USDMF No.  
**038587**

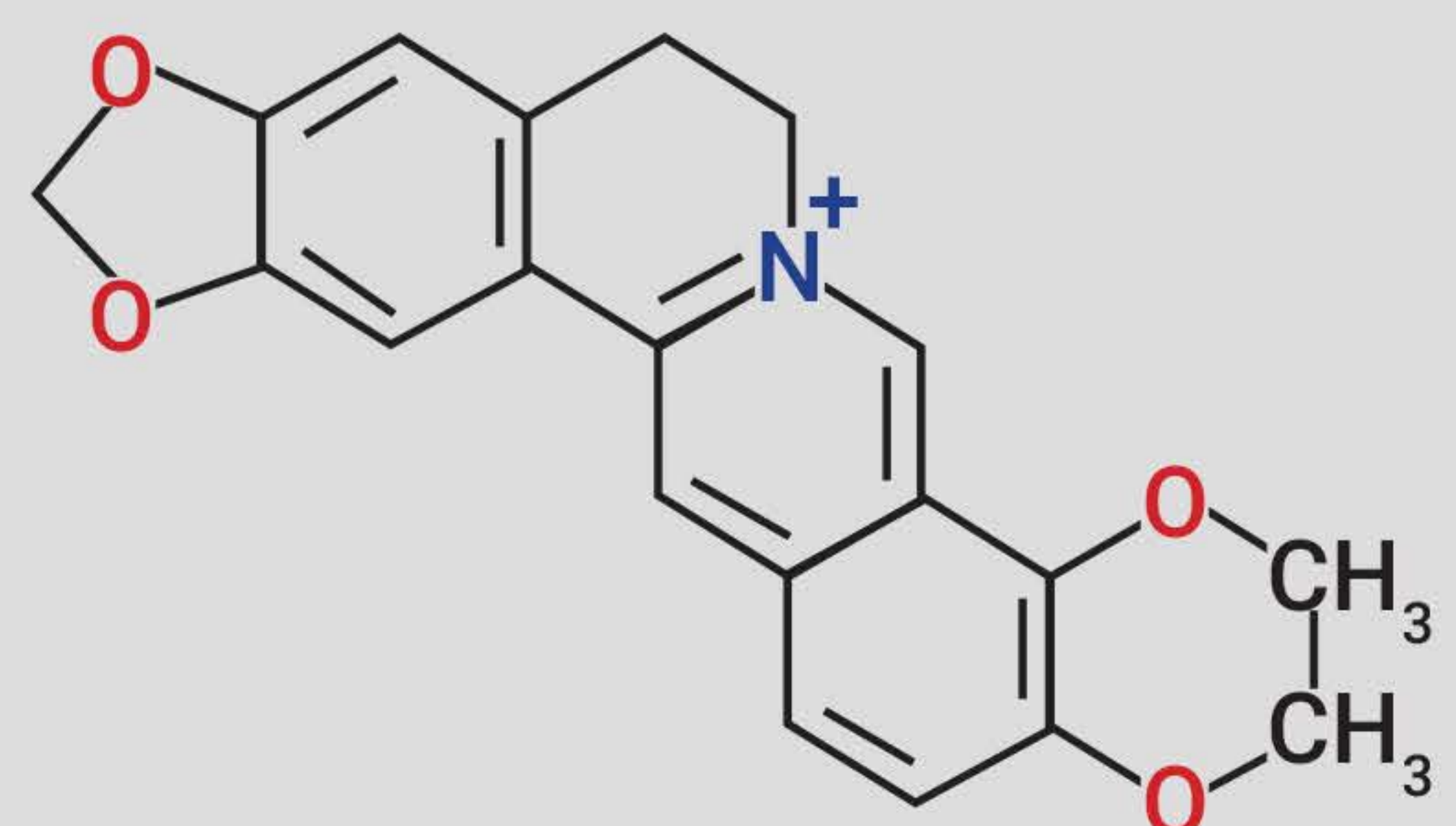


# BERBERINE EXTRACT

A promising supplement for blood sugar regulation, heart health, and more.

*Berberine is a quaternary ammonium salt from the protoberberine group of benzylisoquinoline alkaloids found in such plants as *Berberis vulgaris* / *aristata*.*

*People most commonly use berberine for blood sugar control, high levels of cholesterol or other fats in the blood, and for high blood pressure. It supports healthy blood sugar, cholesterol, and triglyceride level.*





## SPECIFICATION

Product Name	: Berberine HCL
Scientific Name	: Berberis aristata
Plant Part Used	: Root/Bark
Color	: A Yellow Crystalline Powder
Form	: Powder
Available Grade	: 95% - 99%
Method of Analysis	: HPLC

# How is Berberine Extract Different from the Rest

- One of the key differentiating factors of berberine is its ability to impact various aspects of metabolism. It has been studied extensively for its potential to improve Insulin sensitivity, regulate blood sugar levels, lower cholesterol, and support weight loss.
- Berberine has been the subject of numerous scientific studies investigating its therapeutic potential.
- Berberine extract has a high diversity of extraction and detection methods due to its physico-chemical properties.

# The Uniqueness of Sunpure's Berberine

1

Ensuring the authenticity of the herbs / root & delivering quality extract of Berberine (Berberine HCL).

2

Our Berberine Extract is derived from high-quality roots and processed using advanced techniques developed through extensive scientific research and studies.

3

We have harnessed the power of nature and turned it into a potent extract that provides the desired health benefits. We offer the grades 50%, 95% & 99%.

# Activities of Berberine HCL

## Blood Sugar Management

Studies show daily berberine intake can lower fasting and long-term blood sugar levels by up to 20% and 12%, especially when combined with medication.

## Blood Pressure Regulation

Studies have indicated that Berberine may help maintain healthy blood pressure levels. Berberine supplementation significantly reduces systolic and diastolic blood pressure, according to a review.

## Anti-inflammatory activity

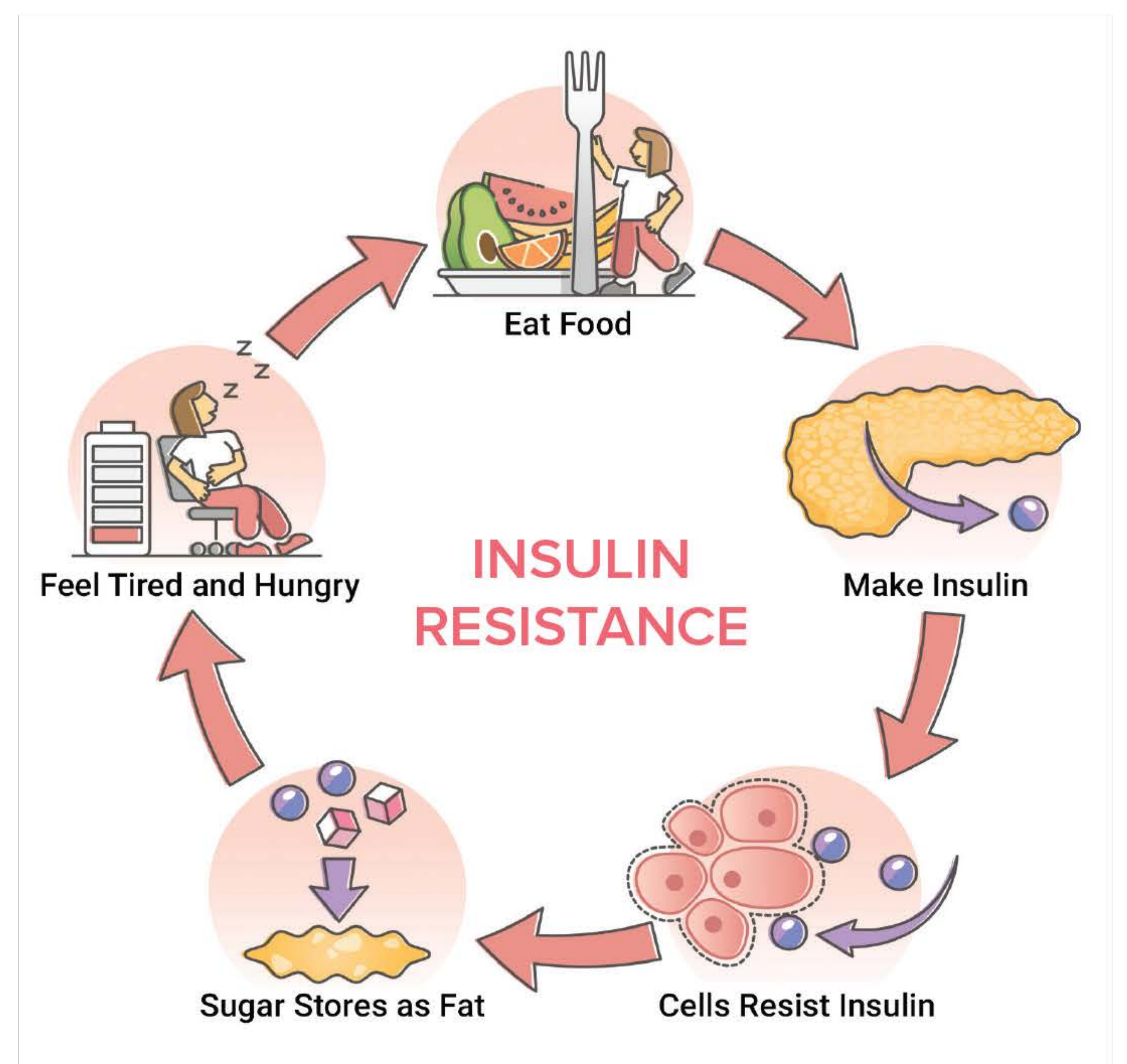
A study published in the International Journal of Cardiology demonstrated that Berberine reduced levels of C-reactive protein (CRP), which in turn reduces inflammation.

## Cholesterol Control

Berberine has shown promise in improving lipid profiles, including lowering total cholesterol, LDL cholesterol, and triglyceride levels.

## Overcoming One of the Leading Health Issues in the World

- Blood sugar has become a leading health problem worldwide, affecting millions of people. But there's good news - berberine, a natural compound, offers a powerful solution to help you manage blood sugar effectively.
- Inhibition of Gluconeogenesis: Berberine inhibits gluconeogenesis genes, lowering blood sugar levels by decreasing liver glucose production.
- Stimulation of Glycolysis: Berberine Extracts improve glucose metabolism by stimulating glycolysis and inhibiting mitochondrial oxidation, enhancing glucose utilization.
- Increased Insulin Sensitivity: Berberine HCL enhances insulin sensitivity, reduces resistance, and enhances insulin receptor expression, lowering blood glucose levels.



# Who Needs Berberine HCL?

## INDIVIDUALS WITH METABOLIC DISORDERS:

Berberine improves glycaemic control, blood lipids, and liver function in metabolic disorders.

## INDIVIDUALS WITH HIGH BLOOD SUGAR:

Berberine has been shown to have powerful blood-sugar-lowering effects and may be as effective as various conventional Type-2 diabetes medications

## INDIVIDUAL WITH HIGH CHOLESTEROL:

Berberine has been shown to reduce cholesterol and triglyceride levels while raising HDL (good cholesterol levels)

## INDIVIDUAL LOOKING FOR NATURAL WEIGHT MANAGEMENT:

Berberine has been studied for its potential to aid in weight loss by curbing cravings, promoting a feeling of fullness, and supporting healthy metabolism.<sup>[2]</sup>

# Berberine in Overcoming Blood Sugar Control (Along with Clinical Study)

A study titled “*Efficacy of berberine in patients with type 2 diabetes mellitus*”<sup>[1]</sup> investigated the efficacy of Berberine and its effects on diabetes and lipid metabolism.

## RESULT

Berberine has been shown to regulate glucose and lipid metabolism in vitro and in vivo. This study was to determine the efficacy and safety of berberine in the treatment of Type 2 diabetes mellitus patients.

In study A, newly diagnosed Type 2 diabetes mellitus were randomly assigned to treatment with berberine. Significant decreases in haemoglobin A1c, fasting blood glucose, postprandial blood glucose, and plasma triglycerides were observed in the berberine group.

In study B, poorly controlled type 2 diabetes mellitus was treated supplemented with berberine. Berberine acts by lowering fasting blood glucose and postprandial blood glucose. Haemoglobin A1c decreased, fasting plasma insulin and homeostasis model assessment of insulin resistance index was reduced.

In conclusion, this study indicates that berberine is a potent oral hypoglycaemic agent with beneficial effects on diabetes and lipid metabolism.

# Berberine in Cholesterol Control: (A Natural Pathway)

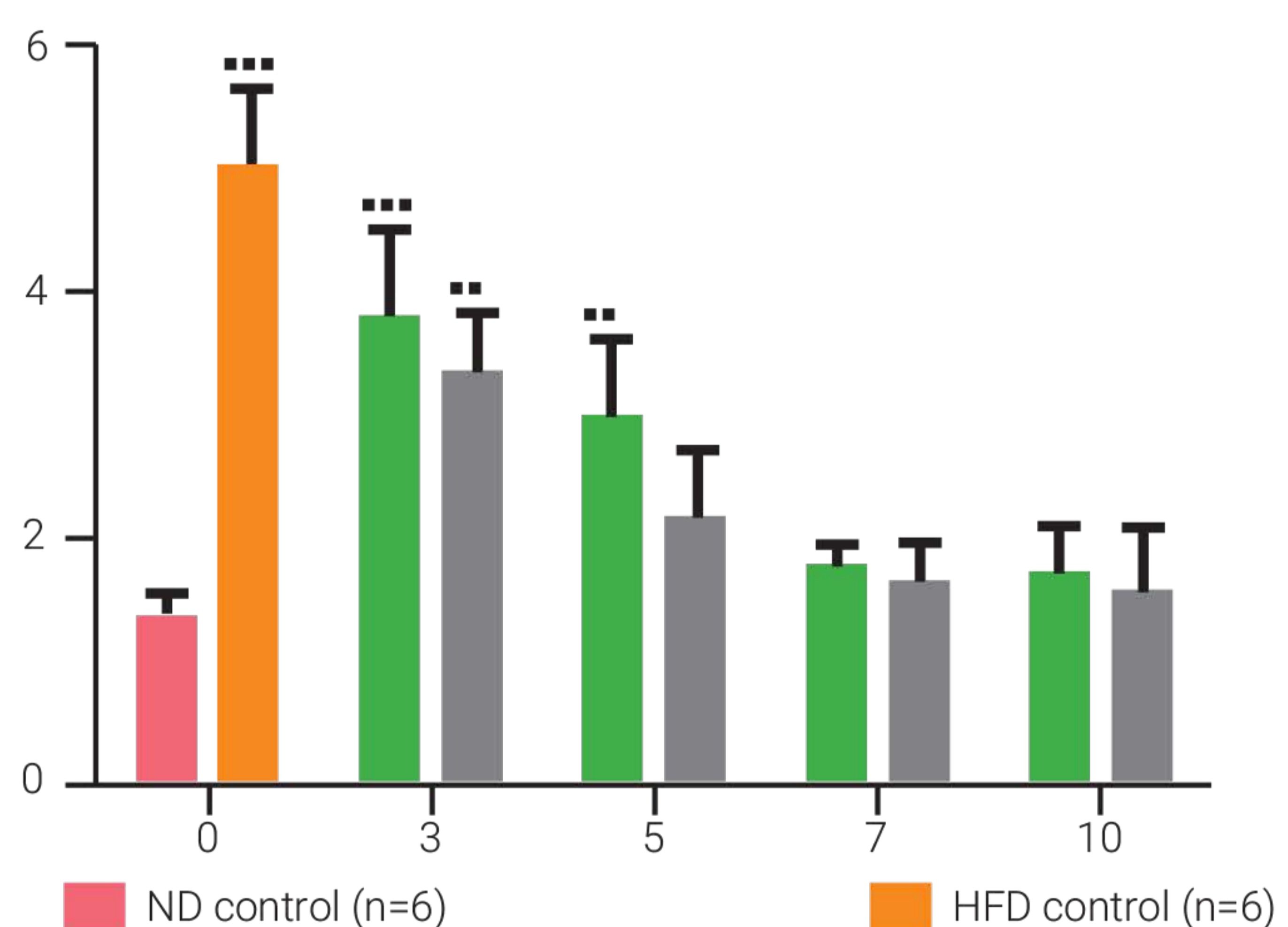
Berberine HCL, as a new medicine for hyperlipidaemia, can reduce the blood lipids in patients. mechanistic studies have shown that Berberine HCL activates the extracellular-signal regulated kinase pathway by stabilizing low-density-lipoprotein receptor mRNA.

## METHOD

Golden hamsters with hyperlipidaemia were fed a high-fat diet for 6 weeks, followed by oral treatment with Berberine HCL or lovastatin. Serum, liver, bile, and faecal cholesterol levels were measured using an enzyme-linked immunosorbent assay.

## RESULT

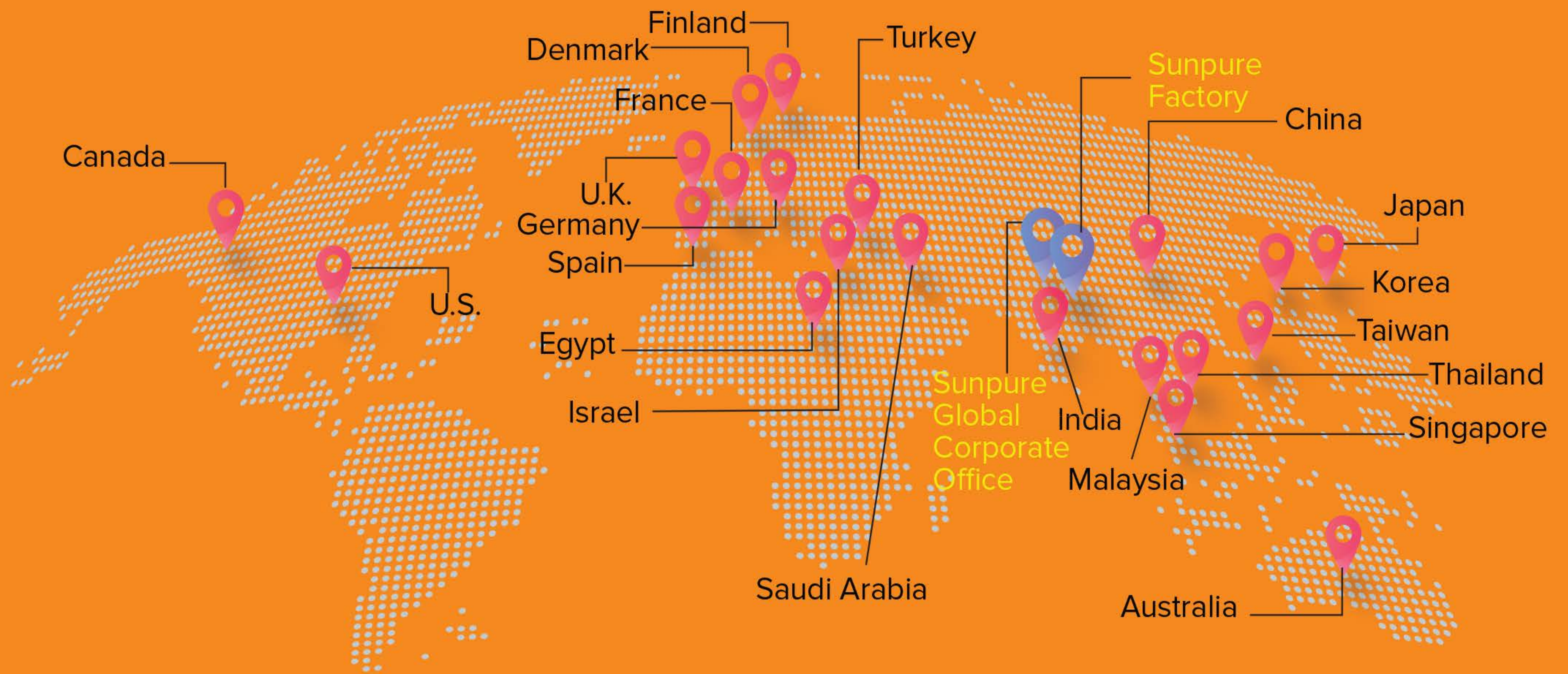
- HFD hamsters exhibited hyperlipidaemic characteristics; Berberine HCL treatment reduced serum TC, TG, and LDL-C levels by 44-70%, 34-51%, and 47-71%, respectively.
- After Berberine HCL treatment, reductions in liver cholesterol were observed by day 3 and became significant by day 7 at both doses
- Meanwhile, bile cholesterol was elevated by day 3 and significantly increased at day 10
- Berberine HCL promoted cholesterol excretion from the liver into the bile in hyperlipidaemic hamsters<sup>[3]</sup> but not in normal hamsters, and these results provide a link between the cholesterol-lowering effect of Berberine HCL with cholesterol excretion into the bile.



**Figure:** Reductions in the liver cholesterol levels of the HFD hamsters were observed by day 3 and became significant by day 7 at both doses.

## References

1. Yin, J., Xing, H., & Ye, J. (2008). Efficacy of berberine in patients with type 2 diabetes mellitus. *Metabolism*, 57(5), 712-717.
2. Llyas, Z., Perna, S., Al-Thawadi, S., Alalwan, T. A., Riva, A., Petrangolini, G., ... & Rondanelli, M. (2020). The effect of Berberine on weight loss in order to prevent obesity: A systematic review. *Biomedicine & Pharmacotherapy*, 127, 110137.
3. Li, X.Y., Zhao, Z. X., Huang, M., Feng, R., He, C. Y., Ma, C., ... & Jiang, J. D. (2015). Effect of Berberine on promoting the excretion of cholesterol in hgh-fat diet-induced hyperlipidemic hamsters. *journal of translational medicine*, 13(1), 1-9.



## SUNPURE CERTIFICATIONS AND ACCREDITATION



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