

GLP Busters

Background

Glucagon-like peptide-1 (GLP-1) is a multifunctional hormone with significant metabolic effects and pharmacological possibilities, including glucose-dependent activation of insulin secretion, attenuation of gastric emptying, and decreased food intake.¹ Furthermore, GLP-1 is associated with anti-inflammatory, cardio- and neuroprotective properties, including reduced apoptosis and possible stimulation in learning and memory.¹ GLP Busters supplement formulation is designed to mimic synthetic GLP-1 receptor agonists, e.g., semaglutide or tirzepatide, as an adjunct to weight loss therapy or standalone, potentially amplifying successful weight management effects.

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The GLP Buster dietary supplement is a proprietary blend of hops extract, beetroot powder, nicotinamide mononucleotide (NMN), and berberine in a vegetable capsule (HPMC). Hops extract is associated with antioxidant (mainly polyphenols), anti-inflammatory, and antimicrobial properties, coupled with positive digestive and sedative effects.^{2, 3, 4} Beetroot powder, rich in betalains (betanin) and nitrates serves as a potent antioxidant and is beneficial for reducing low-density lipoprotein (LDL) cholesterol.⁸ Additionally, beetroot may boost energy supplementation and athletic performance, while decreasing muscle soreness in specific exercises.⁸ Nicotinamide mononucleotide (NMN) is referred to as an anti-aging molecule for its suggested activity as a stable and dependable nicotinamide adenine dinucleotide (NAD⁺) activator, a coenzyme present in all living cells.^{9, 10} A rise in intracellular NAD⁺ levels promote prosurvival mechanisms in the body, mainly energy increases and stimulating cellular repair across all life forms.^{9, 11} Berberine is a plant alkaloid compound popularly used in Eastern medicine for skin diseases and digestive disorders that has been empirically investigated for diabetes treatment (see below) and used as a potential weight loss supplement.¹²

Research

One such method used in biochemical engineering to enhance bioavailability of flavonoids, e.g., hops extract, is prenylation, or the addition of hydrophobic molecules to a protein or a biomolecule.

¹ This process is purported to increase their attraction for estrogen receptors, and, by extension, enable networking with cellular membranes and proteins, allowing them to persist longer in target cells and increasing likelihood for positive antioxidant properties.^{1, 7}

Yin, Xing, & Ye (2008) investigated the efficacy of berberine in patients with type 2 diabetes mellitus based on findings berberine was previously shown to be effective in glucose and lipid metabolism regulation in vitro and in vivo.¹³ The researchers conducted two studies, study A ($n = 36$) consisted of adults with newly diagnosed type 2 diabetes, randomly assigned to treatment with berberine or metformin (0.5g three times a day) in a 3-month trial and study B, ($n = 48$) consisted of adults with poorly controlled type 2 diabetes were treated supplemented with berberine in a 3-month trial.¹³ Study A findings suggest the hypoglycemic effect of berberine was like that of metformin and study B findings found berberine functioned by lowering fasting blood glucose (FBG) and postprandial blood glucose (PBG) from one week to trial end, respectively.¹³ In other

words, the authors found evidence to support berberine as a hypoglycemic agent with positive outcomes on lipid metabolism.¹³

Conclusion

Glucagon-like peptide-1 (GLP-1) receptor agonist inspired therapies are in clinical use and evaluation for treatment of type-2 diabetes and obesity, respectively.¹ The supplement formulation has been biochemically engineered to increase potency and prolonged action, to overcome purported findings of relatively low bioavailability, especially in hops components.^{1, 5, 6} Coupled with synthetic GLP-1 receptor agonists (e.g., semaglutide or tirzepatide) as companion therapy or standalone, some evidence puts forth that natural products may have regulatory outcomes on GLP-1 expression and release.¹⁴ GLP-1 medications and supplements have suggested ability to assist in managing blood sugar levels, decrease appetite, and may be recommended for patients with type 2 diabetes or those seeking healthy weight management strategies.¹⁵

References

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