designs for health®

Performance Peptides™

Plant-Based Bioactive Peptides

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Performance Peptides™ by Designs for Health features PeptiStrong™, plant-based bioactive peptides derived from the fava bean (*Vicia faba*), to support overall muscle homeostasis, endurance capacity, and healthy skeletal muscle growth and retention.* These unique bioactive peptides were discovered, identified, and isolated through state-of-the-art lab testing and AI (artificial intelligence) machine learning by untangling the complex nature of food-derived products for potential clinical benefits.[1] Performance Peptides™ is designed to support muscle strength, endurance, recovery, retention, and overall performance in individuals seeking to maintain a healthy body composition, lean body mass, and basal metabolism, including aging men and women as well as active individuals.*

Benefits*

- Promotes skeletal muscle protein synthesis and retention[1,2,8,9]
- May mitigate age-related muscle loss and weakness[2,8,9]
- May promote healthy body composition and basal metabolism[1–5,8,9]
- Supports healthy aging and healthspan[2,8,9]
- Supports muscle strength recovery[1,2,8,9]
- May help promote endurance capacity[1,2,8]
- Supports a healthy inflammatory response[1,2,6,8]

Formula Highlights

- Delivers 2.4 g of PeptiStrong™, three patented, highly absorbable plant-based bioactive peptides derived from the fava bean (*Vicia faba*)
- PeptiStrong™ is a cutting-edge new ingredient at the forefront of emerging research, with ongoing studies in progress. One clinical study demonstrated that PeptiStrong™:
  - Helped increase muscle recovery rate by 144%[1]
  - Helped increase performance recovery by 54%[1]
  - Helped reduce muscular fatigue by 47%, helping to support muscular endurance[1]
- Gluten-free, dairy-free, soy-free, vegan; non-GMO

Supplement Facts

Serving Size 4 capsules
Servings Per Container 30

Amount Per Serving		% Daily Value
Calories	10	
Total Carbohydrate	1 g	1%*
Protein	1 g	0%*
PeptiStrong™ Fava Bean (*Vicia faba*) Protein Hydrolysate	2.4 g	**

*Percent Daily Values are based on a 2,000 calorie diet.
**Daily Value not established.

Supporting Muscle Strength, Endurance, Recovery, and Retention*

Performance Peptides™ may support adults seeking to promote muscular health, or their "muscle span," along with active individuals seeking to support healthy muscle recovery and endurance capacity.* Supporting optimal muscle health is clinically relevant to the general population, as skeletal muscle can be considered the metabolic powerhouse of the body and promotes a healthy body composition by optimizing metabolic rate.[2] Skeletal muscle functions as an endocrine organ by producing myokines that regulate metabolism, inflammatory responses, and other systemic processes.[3,4] It also acts as a nutrient-sensing organ, where it metabolizes, detects, and responds to changes in glucose, amino acids, and fatty acids to maintain energy homeostasis.[5] Therefore, maintaining healthy muscle mass is important not just for athletic performance but also for cardiometabolic health, cognitive function, injury recovery, and physical independence during the natural aging process.[1]

PeptiStrong™ has been demonstrated both in vitro and in vivo to support muscle health.[1,2,6] In vitro testing using murine skeletal muscle cells and human macrophages showed that PeptiStrong™ upregulates the mammalian target of rapamycin (mTOR) and phosphorylated-S6 pathways, which are crucial for muscle protein synthesis and maintaining overall muscle health.[2] PeptiStrong™ also reduced the expression of genes associated with protein degradation and muscle loss, including Atrogin-1 and MuRF-1,[2] and significantly decreased lipopolysaccharide-induced tumor necrosis factor-alpha (TNF-α) secretion by 55%,[6] indicating a potential to support healthy inflammatory responses post-exercise.[7] In a preclinical study with mouse models, daily administration of PeptiStrong™ for 18 days (equivalent to 2.8 mg/day for humans) significantly attenuated muscle atrophy in the soleus hindlimb muscle by nearly 50% and increased the integrated density of both Type I and Type II fibers, which are essential for endurance and rapid movement, respectively.[2] Moreover, in vitro models demonstrated that PeptiStrong™ can survive gastrointestinal digestion, transfer across the lumen into the blood vessel, and remain stable in human plasma, highlighting its potential bioavailability.[6]

Clinical Studies with PeptiStrong™

In a randomized, double-blind, placebo-controlled trial, 30 healthy men (aged 30 to 45) supplemented with 2.4 g/day of PeptiStrong™ for 14 days prior to performing strenuous exercise to assess its effect on recovery and delayed-onset muscle soreness (DOMS). In the placebo group, muscle strength declined significantly at 48 hours post-exercise ($p = 0.032$) and remained below baseline at 72 hours. In contrast, the PeptiStrong™ group maintained their strength at 48 hours and showed a significant increase at 72 hours ($p = 0.025$), translating to a 144% improvement in recovery rate. Isokinetic leg

extension performance was also 54% greater in the PeptiStrong™ group at 72 hours, and fatigue index improved significantly (p = 0.002), with a 47% reduction in fatigue and enhanced muscular endurance compared to placebo (p = 0.041).[1]

Furthermore, biomarker analysis revealed favorable modulation of myokines (cytokines released by muscle cells in response to muscular contractions), which can indicate injury to muscle tissue. The PeptiStrong™ group exhibited a 56% reduction in circulating myostatin (p = 0.006), a key inhibitor of muscle growth. Elevated levels of fractalkine (p = 0.030) and osteonectin/SPARC (p = 0.025) were observed, both of which are implicated in muscle tissue regeneration, mitochondrial biogenesis, and adaptation of muscle to exercise. Trends toward increased irisin and interleukin-15 (IL-15), which are myokines involved in glycogen replenishment and muscle regeneration, were also noted (p = 0.159). Lastly, fibroblast growth factor-21 (FGF-21), a marker of muscle atrophy and metabolic stress, was significantly lower at 0 and 2 hours post-exercise in the PeptiStrong™ group, suggesting preserved muscle homeostasis.[1]

Another double-blind RCT evaluated *Vicia faba* protein hydrolysate (VFH; 2.4 g/day) combined with resistance training in 72 healthy, untrained male and female adults in a 1:1 ratio by gender (aged 19 to 40)compared to placebo. All participants completed three full-body resistance training sessions per week for eight weeks while maintaining consistent dietary protein intake (~1.2 g/kg/day), which did not differ significantly between groups. Outcomes were analyzed in the per-protocol population (n = 55), after excluding participants for noncompliance.[8]

Lower body strength improved significantly in the VFH group. By day 28, bilateral leg extension 1RM averaged 78.5 kg for VFH versus 69.0 kg for placebo (p = 0.045); by day 56, it reached 83.9 kg versus 74.7 kg (p = 0.05), reflecting a 12.2% greater strength gain in the VFH group. Although both groups improved with training, integrated area under the curve (iAUC) analysis revealed a ~24.5% greater cumulative improvement in leg strength with VFH supplementation (p = 0.140). Upper body strength gains were similar across groups, which may reflect biomechanical differences and greater hypertrophic potential in lower limb musculature.[8]

Muscular endurance also improved more substantially within the VFH group. By day 56, participants in the VFH group completed 4.5 additional leg extension repetitions to failure at 80% of their 1RM, compared to 2.3 reps in the placebo group — an adjusted difference of 2.2 repetitions (p = 0.022), reflecting a 21.6% greater improvement. At the end of the study, 87% of VFH users showed enhanced leg endurance, versus 69% of those receiving a placebo.[8]

Biomarker analyses revealed that VFH modulated several circulating myokines associated with muscular and metabolic adaptation. Plasma levels of IL-6, which supports satellite cell activation and lipid metabolism, were significantly increased, alongside markers such as FSTL-1 (linked to lipolysis), apelin (involved in muscle atrophy modulation), FABP3 (reflecting mitochondrial function), osteocrin (indicative of bone formation), and oncostatin M (associated with muscle and bone maintenance). Notably, GDF-15, a stress-related myokine tied to mitochondrial dysfunction and sarcopenia, was significantly reduced. These molecular shifts may help explain the observed gains in muscle strength, endurance, and recovery capacity.[8]

Exploratory DXA analysis revealed a small but statistically significant increase in whole-body bone mineral content in the VFH group (+22.2 g versus –8.2 g; p = 0.032), suggesting possible benefits beyond muscle adaptation. Finally, self-reported health status, assessed through the RAND SF-36 questionnaire, improved significantly in the VFH group. By day 28, 51.8% of VFH users scored above 95, compared to just 14.3% in the placebo group (p = 0.008), indicating a markedly better perceived change in health.[8]

While those clinical findings were observed with 2.4 g/day of PeptiStrong™, one clinical study examined a larger serving size. Thirty young men consumed 10 g of PeptiStrong™ or milk protein concentrate (MPC) twice daily, starting two days before seven days of leg immobilization, followed by 14 days of remobilization.[9] Both groups experienced a similar loss of muscle size during immobilization and a comparable, partial recovery during remobilization. However, during remobilization, the PeptiStrong™ group showed significantly greater myofibrillar protein synthesis (MPS) rates compared to the MPC group (p = 0.027).[9] These findings suggest that PeptiStrong™ may support muscle repair following inactivity and may complement common protein sources, such as MPC or whey.[9] While further studies are ongoing, these clinical results highlight the potential of bioactive plant-based peptides for muscle recovery, performance, and homeostasis.*

Recommended Use: Take 4 capsules or as directed by your health-care practitioner.

Warning: Consult your health-care practitioner prior to using this product if you are pregnant, nursing, taking medication, under 18 years of age, or have a medical condition.

For a list of references cited in this document, please visit:

https://www.designsforhealth.com/api/library-assets/literature-reference---performance-peptides-tech-sheet-references

Dosing recommendations are given for typical use based on an average 150-pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.

PeptiStrong®

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

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