

KLEAN ESSENTIAL AMINOS + HMB®

Natural Orange Flavor

DESCRIPTION

KLEAN ESSENTIAL AMINOS + HMB® provides a great-tasting, leucine-rich blend of essential amino acids combined with HMB®, vitamin D₃, and glutamine for muscle mass and function. Leucine, a branched-chain amino acid, has an anabolic role in muscle protein synthesis and may specifically benefit athletes by preserving healthy muscle mass and muscle function. β -Hydroxy- β -methylbutyrate (HMB) is a metabolite of leucine that supports lean muscle mass through two unique mechanisms: decreased muscle breakdown and increased protein synthesis. Vitamin D and glutamine provide additional support for muscle health.‡

Klean Essential Aminos+HMB is tested and certified by the NSF Certified for Sport® program, which was created to meet the growing demands of athletes, coaches and healthcare professionals to certify that sports supplements are safe and completely free from banned substances. Every product that carries the NSF Certified for Sport® mark has undergone stringent laboratory testing to confirm content, purity and compliance.

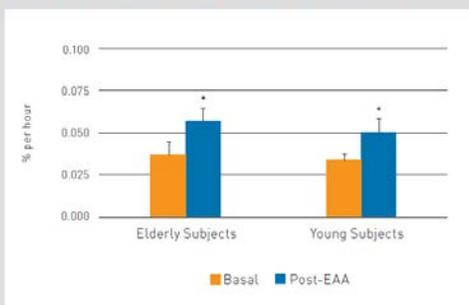
INDICATIONS

- Supports healthy muscle mass and muscle function‡
- Provides anabolic muscle-building support‡
- Attenuates muscle protein breakdown and preserves lean muscle mass‡

FUNCTIONS AND MECHANISMS OF ACTION

In resting conditions, higher amino acid concentrations in plasma have a stimulatory effect on protein synthesis. Immediately after exercising, this effect of increased availability of amino acids on protein synthesis is exaggerated compared with the resting condition. Among the amino acids, essential amino acids (EAAs) are primarily responsible for the regulation of muscle protein synthesis. Leucine, in particular, plays an important role in that process. Calcium β -Hydroxy- β -methylbutyrate-monohydrate (HMB) is a metabolite of leucine that decreases protein breakdown under conditions of physiological stress, in part by modulating the ubiquitin proteasome proteolytic pathway. Several studies have indicated that HMB also stimulates protein synthesis through the activation of the mTOR pathway.‡

Increase in Muscle Protein Synthesis following a single dose of Amino 9™‡



Fractional synthetic rate (%/h) of mixed muscle protein in the basal state (Basal) and after the ingestion of 6.7 g of EAA (Post-EAA) containing 41% leucine.

*Significantly different from the corresponding basal value (P < 0.05).

Am J Physiol Endocrinol Metab 291: E381-E387, 2006.

Research involving physically active adults showed that subjects who supplemented with HMB increased their anaerobic power by 54% over training alone. Although leucine offers similar benefits to HMB in increasing protein synthesis, HMB is more potent than leucine for promoting strength gains due to the additional benefit HMB provides in decreasing protein breakdown. Additionally, as approximately 5% of leucine is converted to HMB, consuming 60 grams of leucine would yield 3 grams of HMB. ‡

The Amino 9™ blend of essential and branched-chain amino acids has been clinically shown to boost muscle protein balance by increasing anabolism and limiting catabolism. Supplemental essential amino acids support muscle protein balance more than BCAAs alone. In a human clinical trial with elderly and young subjects, BCAAs were shown to stimulate 22% more muscle protein synthesis (MPS) than placebo. Furthermore, complementing the BCAAs with EAAs resulted in 50% better MPS than BCAAs alone.‡

Vitamin D₃ has a positive effect on muscle protein and energy metabolism and is therefore necessary for

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healthy muscle function. Glutamine is an amino acid that acts as an essential substrate for GI mucosal cells, immune activity, and storage of muscle glycogen. Therefore, adequate levels of both vitamin D and glutamine in the body may support healthy muscles.‡

FORMULA (#KA57737P)

Serving size 1 scoop (9.15 g) contains:

Calories	20
Total Carbohydrate.....	<1 g
Vitamin D ₃ (as cholecalciferol).....	12.5 mcg (500 IU)
Calcium.....	210 mg
L-Glutamine.....	2 g
myHMB® Calcium β-Hydroxy-β-methylbutyrate-monohydrate (HMB)	1.5 g
Amino 9™ Amino Blend	3.35 g

L-Leucine, L-Lysine, L-Threonine, L-Isoleucine, L-Valine, L-Phenylalanine,

L-Methionine, L-Histidine, L-Tryptophan

Other Ingredients: Natural flavors, Citric acid, Stevia leaf extract, Monk fruit extract (*Siraitia grosvenorii*), Turmeric (for color).

Non- GMO, Gluten-Free

Amino9™ is a registered trademark of Compound Solutions Inc.

MyHMB® Nutritional uses of Calcium Hydroxy Methylbutyrate Monohydrate (HMB) and Vitamin D are licensed to Douglas Laboratories under U.S. Patent # 8,815,280, # 9,259,430, #9,539,224 and #9,707,241.

SUGGESTED USE

As a dietary supplement, adults take 1 scoop, 1-2 times daily dissolved in 8-10 oz of water or other beverage, or as directed by a coach, trainer, or health professional.

SIDE EFFECTS

No adverse side effects reported.

STORAGE

Store in a cool, dry place, away from direct light. Use only if safety seal is intact.

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For more information on Klean Essential Aminos +HMB visit kleanathlete.com

‡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.

Manufactured for
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