

A bit scientific info.



Notwithstanding the various creatine preparations under the numerous brand names, there is no firm evidence of the superiority of one formulation over the other. Case in point, the existing study has shown that the muscle creatine content does not alter significantly when comparing creatine-monohydrate and creatine ethyl ester (1). A comprehensive review concluded that, despite the marketing claims, the advantage of the multiple creatine forms over creatine-monohydrate regarding their safety and efficacy profiles is not substantiated (2).

However, CreGAAtine is a novel scientifically proven dietary supplement, made of creatine and guanidinoacetic acid (GAA) which is a natural organic compound that acts as a direct precursor of creatine. GAA is synthesized in a catalytic reaction from L-arginine and glycine via an enzyme called L-arginine-glycine amidinotransferase (AGAT). In the reaction, an amidino group is transferred from L-arginine to glycine forming GAA and ornithine. The following transformation of GAA to creatine is catalyzed by S-adenosyl-L-methionine:N-guanidinoacetate methyltransferase (GAMT) where the amidino group is methylated thereby forming creatine. Both enzymes are found in a high amount in pancreas and liver. While AGAT is also highly expressed in the kidneys, the level of GAMT is low (3). Even though AGAT located in the liver was found to be repressed by creatine, it does not seem to occur with GAMT, which may imply that the conversion of GAA to creatine cannot be repressed when GAA is exogenously applied (4). Furthermore, other tissues with high energy output, such as the brain, skeletal muscle and myocardium, were also found to be additional places where GAA-creatine conversion occurs (5,6). According to Daly's research, it seems that GAMT activity is high enough to synthesize the sufficient amount of creatine in the skeletal muscle tissue as well (3,5).

8.5x



CreGAAatine boosts muscle and brain bioenergetics with superior creatine-increasing effect.

Creatine-monohydrate administration over 4 weeks increases muscle creatine of about 2% while CreGAAatine™ leads to a 16.9% increase of creatine inside the skeletal muscle, which is a relative rise of 8.5 times (7). A randomized double-blind superiority trial compared the effect of the administration of GAA-creatine preparation to creatine alone over 4 weeks. The results showed that the combination yields a significantly greater change from baseline in creatine level in vastus medialis muscle, a part of the quadriceps muscle group (7).



CreGAAAtine has 4 ways to enter the cell.

Creatine has only one known way of entering the cell, which over time becomes saturated with continuous creatine supplementation, resulting in a lower capacity to transport creatine into the cell (8).

CreGAAAtine™ not only uses the regular creatine receptors, but also utilises 3 additional pathways in order to enter the cell, including GABA and taurine receptors, and even passive diffusion which does not require any protein carrier (12,13). Once it enters the cell, GAA turns into creatine in a GAMT-controlled catalytic reaction and increases intracellular creatine levels.

Moreover, CreGAAAtine ensures the desired boost as there are less non-responders in contrast to regular creatine (14). As creatine receptors in brain and muscles are close to be saturated with endogenous creatine under physiological conditions (12,15), the advantage of GAA to utilise additional transport systems creates an effective strategy to overcome limited exogenous creatine utilisation and meet advanced energetical needs in exhaustive work-out.



CreGAAatine helps weak muscles get stronger.

CreGAAatine targets the weaker muscle groups as well, and increases their strength by 20% compared to creatine-monohydrate (7). A study on 48 athletes, both men and women, demonstrated that this novel dietary agent and creatine precursor significantly improves both upper and lower body muscle endurance (16).

The combination of GAA and creatine is of particular interest due to the possible synergism between the two substances (8). GAA was shown to target the muscle groups with lower levels of strength, which are muscles of the upper body in the general population. The facilitation of the GAA absorption by the exercise-naive tissues may be explained by their tendency to better absorb GAA as the GAA levels are initially lower in these compartments (7).



CreGAAtine reduces creatine-driven side effects.

Creatine tends to increase total body weight by water retention giving your muscles a balloon-like appearance. A study that examined two different creatine formulations demonstrated that the creatine-monohydrate intake results in the largest incline in total and intracellular body water when compared to placebo and creatine ethyl ester. Creatine ethyl ester led to the highest increase in extracellular water in comparison to the two other groups (17).

The optimized formulation in CreGAAtine was created to make you stronger and to help you to build your lean muscles without excess body weight gain. In a randomized, double-blind trial, GAA-creatine arm was shown to result in a lower weight gain and more favorable outcomes in upper body muscular strength (7).



CreGAAtine is easily taken. Anywhere, anytime!

With the use of bulk packaging, creatine products tend to lose their potency by up to 50% over time as creatine easily soaks up water. The single-dose packaging of CreGAAtine not only ensures optimal bioavailability and stability but also gives you the convenience of taking your single doses with you (18).

Creatine is a hygroscopic substance, which indicates that creatine powder tends to absorb moisture from the air (19). As a consequence, over time creatine turns to its inactive form, creatinine, which does not have an ergogenic effect as creatine (20). Contrarily, GAA is a highly stable substance as its content does not vary more than 5% even after 15 months of storage. It implies warranted delivery of GAA and ensures its creatine-boosting and performance-enhancing effect (16,21,22).

CreGAAtine comes in an innovative packaging. Pharmaceutical grade triplex foil sachet was designed to provide the maximum protection from moisture and to prevent creatine degradation. The CreGAAtine powder inside the sachet remains intact which is reflected in its fine granulation once the sachet is opened.

No known safety concerns

In a randomized double-blind controlled trial examining the GAA-creatine formulation, no side effects were reported.

Total plasma homocysteine levels remained in the physiological range, as well as the tissue choline levels (7).

Administration of sole GAA appears to be safe in terms of GAA brain accumulation and DNA methylation following its intake (23,24).

Trust your product - it's important.

Many creatine-based supplements on the market contain some contaminants, which surely implies their low quality (25).

CreGAAatine has been certified by Informed Sport which guarantees that each batch we release to the market is free of banned substances.

Do not risk it, be a sport professional with CreGAAatine.



SPORT

 **CREGAAATINE[®]**

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