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BCAAs

What are they?

[Branch chain amino acids \(BCAAs\)](#) are a group of three essential amino acids that are integral to human health. They include:

Leucine

Isoleucine

Valine

Each of these amino acids plays a unique role in the body, but they all share common characteristics that make them particularly important in the context of nutrition and health.

BCAAs are primarily recognized for their role in muscle protein synthesis. This process is crucial for muscle growth and repair, making BCAAs a key ingredient in many sports and health-related food products. In addition to their role in muscle protein synthesis, BCAAs also contribute to energy production in the body. They are metabolized in the muscle, rather than the liver, which allows them to be used as a quick source of energy during physical activity.

Where are they used?

Branched chain amino acids are commonly used as a key ingredient in food and beverages targeted towards health-conscious consumers and athletes. BCAAs can be found in protein bars and dietary supplements due to their muscle-building properties. They are often used in combination with proteins such as whey in powdered sports nutrition beverages, or with electrolytes in powdered and ready-to-drink hydration beverages.

Variations and Selection Criteria

Branched chain amino acids are available as L-amino acids which is the same form they occur in the proteins of our bodies. They can be purchased as single ingredients (namely L-leucine, L-isoleucine and L-valine) or as a blend. The blend is in a 2:1:1 ratio, meaning it contains two grams of leucine for every one gram of isoleucine and one gram of valine. This is the ratio has been shown to enhance muscle protein synthesis, as well as increase energy and reduce fatigue during exercise.

If you are using BCAAs in a powdered beverage application, you should consider an instantized version that will go into solution quickly. Since lecithin is the commonly used instantizing agent, you need to determine whether you can accept soy lecithin (which is an allergen and may be genetically modified) or sunflower lecithin.

Conclusion

These essential amino acids, namely leucine, isoleucine, and valine, play a pivotal role in various physiological processes, making them a crucial ingredient in food products. They aid in muscle growth and recovery, making them particularly beneficial in products targeted towards active individuals or those engaged in physical training. The use of BCAAs in food and beverage manufacturing is not just a trend, but a forward-thinking approach to creating food products that cater to the health and nutritional needs of consumers. As we continue to understand more about these essential amino acids, their application in the food industry is likely to expand, paving the way for innovative, health-

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focused products.

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