

PRODUCT INFORMATION

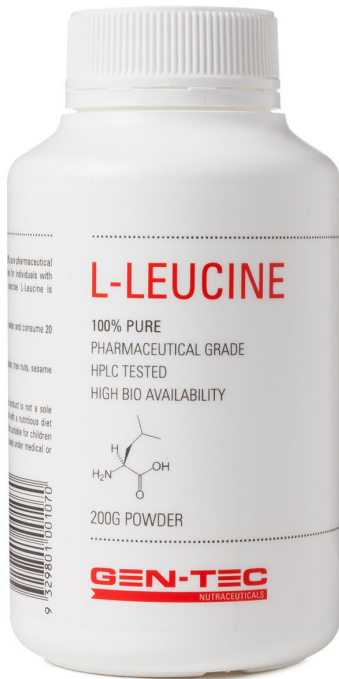
L-LEUCINE

BASIC FUNCTIONS

Muscle recovery, Muscle growth, reduce muscle breakdown, Improve performance.

Leucine is classified as the primary branched chain amino acid (BCAA) which has potent stimulatory effects on muscles protein synthesis (MPS – muscle growth) (Kirby et al., 2012). The beneficial effects of BCAA is primarily due to leucine, hence a BCAA product that is very high in leucine content will provide more physiological benefit than a product with equal amounts of the three BCAA. Moreover the mechanisms behind leucine's beneficial effects on muscle growth works via a few methods. Firstly just like exercise, leucine directly stimulates a gene responsible for telling the body to build and repair muscle via the use of amino acids (Koopman, 2007, Dreyer et al., 2008). Secondly it stimulates the pancreas to secrete insulin which has a potent anabolic effect and suppressive effect on cortisol (muscle breakdown) (Dreyer et al., 2008). Lastly it provides an amino acid that is present in high quantities within skeletal muscle (Ispoglou et al., 2011). Overall the effects of leucine on exercise recovery and growth is through insulin-dependent and non-insulin-dependent pathways (Koopman, 2007).

Various studies have looked at the performance enhancing effect of leucine supplementation which in the majority of cases report an ergogenic effect (improved performance). A study in untrained men in 2011 reported that the group that ingested 4g of leucine each day for 12 weeks, significantly improved their 1 repetition maximum (1RM) as a result of increased strength (Ispoglou et al., 2011). Another study in 2006 reported that dietary leucine supplementation increased time to exhaustion and upper body power in competitive canoeists (Crowe et al., 2006). Furthermore, combining leucine with a whey protein post workout increases markers for protein synthesis greater than either alone (Crowe et al., 2006). Therefore the use of leucine in exercising individual can decrease muscle breakdown, improve protein synthesis, enhance endurance performance and strength/power performance in most athletes.



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CROWE, M. J., WEATHERSON, J. N. & BOWDEN, B. F. 2006. Effects of dietary leucine supplementation on exercise performance. *European Journal of Applied Physiology*, 97, 664-72.

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ISPOGLOU, T., KING, R. F., POLMAN, R. C. & ZANKER, C. 2011. Daily L-leucine supplementation in novice trainees during a 12-week weight training program. *International journal of sports physiology and performance*, 6, 38-50.

KIRBY, T. J., TRIPLETT, N. T., HAINES, T. L., SKINNER, J. W., FAIRBROTHER, K. R. & MCBRIDE, J. M. 2012. Effect of leucine supplementation on indices of muscle damage following drop jumps and resistance exercise. *Amino Acids*, 42, 1987-96.

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SIZE: 200 grams powder
FLAVOUR: Natural