MCT from Coconut

Code FE2449 – 150 gramms

Our MCT (medium chain triglyceride) powder is obtained exclusively from coconuts grown in a controlled manner. Acacia is a premium source of soluble fibre, which gives the product a soft and pleasant texture.

- 70% medium chain triglycerides (MCT): 50% caprylic acid (C8) and 35% capric acid (C10).
- 30 % acacia gum.

- Easy to digest and metabolise
- Ideal for ketogenic diets

Ingredients: MCT-powder from coconut oil (*Cocos nucifera*) and acacia gum (*Acacia senegal*).

Nutritional information:	Per serving 5 g	Per 100 g
Energy (kJ/kcal)	**142/34**	**2 807/671**
Fat	3,5 g	70,0 g
Saturates	3,5 g	70,0 g
Carbohydrate	0,0 g	0,0 g
Sugars	0 g	0,0 g
Fibre	1,3 g	25,5 g
Protein	0,0 g	0,8 g
Salt	0,0 g	0,08 g
MCT	3,5 g	70,0 g
Caprylic acid (C8)	3,5 g	70,0 g
Caprylic acid (C10)	1,2 g	24,5 g
Acacia gum	1,5 g	0,08 g

Format:

150 g

Recommended daily dose:

1 teaspoon (5 g) daily dissolved in liquid or with food.

Do not exceed the stated recommended daily dose.

Indications and uses:

- It helps in weight loss diets.
- Supplement in ketogenic diets.
- A suitable energy source for endurance athletes.
- Patients with compromised appetite, intestinal malabsorption (biliary cirrhosis, pancreatic insufficiency, short bowel syndrome, celiac disease or chronic liver disease).
- Improves cognitive function (Alzheimer's disease).

Our Coconut MCT Powder is sourced exclusively from organically grown coconuts, a natural source rich in medium chain triglycerides (MCTs).

Formulated with organic acacia, which is a source of soluble fibre, our Coconut MCT Powder is a versatile source of ketogenic fats for an active and healthy lifestyle.

In powder form, it is an easily metabolised alternative fuel for the brain and body which does not promote fat storage.

Its smooth texture and neutral flavour combine well to energise hot or cold drinks, vinaigrettes, baked products and innovative and healthy cooking.

It is an excellent way to increase the energy content of your nutritional intake with useful, healthy calories.

MEDIUM CHAIN TRIGLYCERIDES (MCT): are a type of saturated fatty acid with 6 to 10 carbon atoms [(1)]. These medium chain fatty acids are: caproic acid (C6: 0), caprylic acid (C8: 0) and capric acid (C10: 0).

The digestion and absorption of fatty acids partially depends on their length. The digestion of all triglycerides begins in the mouth and stomach with lingual and gastric lipase action [(2)]. Once in the small intestine, long-chain fatty acids

stimulate the release of pancreatic lipase and bile, thereby completing the digestive process and allowing them to be absorbed into the intestinal cells [3].

In contrast, MCTs do not stimulate the release of pancreatic lipase and bile [4,5], and these diffuse passively through the intestinal cells into the portal vein [6]. MCTs are absorbed faster than long-chain fatty acids and they are absorbed at a similar rate to glucose [7].

The ingestion of medium-chain triglycerides by obese individuals as part of a low-calorie diet has been associated with elevated blood ketone body levels and reduced nitrogen excretion, which is thought to exert protein-sparing effects. The results of a 2-week study suggested that supplementing a low-calorie died with MCT may initially accelerate the rate of body weight loss and reduce the contribution of fat-free mass to total weight loss [8].

Animal studies [9] have shown that medium-chain triglycerides have a higher propensity for oxidation than long-chain fatty acids, and, likewise, this has been demonstrated in humans [10]. Human studies have shown that consumption of medium-chain triglycerides enhances the oxidation of long-chain fatty acids and medium-chain fatty acids [11], and it is thought that this could have important implications for obesity, given that although previous studies have observed that obese individuals have lower oxidation of long-chain fatty acids, these studies did not note any alterations in terms of the oxidation of medium-chain fatty acids [12].

Although theoretically medium-chain triglycerides (MCTs) are considered as a source of fatty acids that are more readily catabolised for energy production during exercise[13,14], whether or not MCTs can offer additional performance-enhancing benefits remains a controversial topic [15-20]. In studies assessing glycogen, no significant interaction for aerobic exercise over a normal distance [21,22] or ultra-distance [23] with or without additional carbohydrates [24] has been observed.

There is not sufficient conclusive evidence to suggest that calories from medium-chain triglycerides are in any way better for performance than carbohydrates or long-chain fatty acids, although the calories themselves may offer ergogenic properties.

In conditions in which digestion, absorption or transportation of fats is impaired, MCT supplementation can alleviate symptoms and prevent malnutrition due to its unique ability to bypass the majority of the digestive and absorption processes that are required for long-chain fats [25]. For example, the benefits of MCT supplementation have been observed in people with biliary cirrhosis, pancreatic insufficiency, short bowel syndrome, chronic liver disease or celiac disease [26-30].

Several studies have demonstrated the ability of medium-chain triglycerides to improve cognitive function in patients with Alzheimer's disease [31-34]. These preliminary studies suggest that ketogenic diets improve cognitive function in people with Alzheimer's disease by increasing the use of ketones in the brain [35].

ACACIA GUM (*Senegal acacia*): Acacia gum or Arabic gum is a soluble dietary fibre which is obtained from the resin or exudate of the stems and branches of Acacia senegal. It is mainly made up of complex polysaccharides (95%) consisting of highly branched galactan polymers [36]. While 80% of the current production is used by the food industry for various applications (emulsification, encapsulation, coating, gum candies, etc.), acacia gum has traditionally been consumed by African and Indian populations to improve digestive comfort and intestinal transit. Its fermentation is slow and favours bifidobacterium growth [37,38]. Acacia gum is therefore a soluble dietary fibre with prebiotic properties without bothersome intestinal side effects.

References:

Babayan 1) Babayan, Vigen K. "Medium chain length fatty acid esters and their medical and nutritional applications." Journal of the American Oil Chemists' Society 58.1 (1981): 49A-51A.
2) Mu, Huiling, and Trine Porsgaard. "The metabolism of structured triacylglycerols." Progress in lipid research 44.6 (2005): 430-448.
3) Mansbach, Charles M., and Fred Gorelick. "Development and physiological regulation of intestinal lipid absorption. II. Dietary lipid absorption, complex lipid synthesis, and the intracellular packaging and secretion of chylomicrons." American Journal of Physiology-Gastrointestinal and Liver Physiology 293.4 (2007): G645-G650.
4) McLaughlin, John, et al. "Fatty acid chain length determines cholecystokinin secretion and effect on human gastric motility." Gastroenterology 116.1 (1999): 46-53.
5) Symersky, T., et al. "The effect of equicaloric medium-chain and long-chain triglycerides on pancreas enzyme secretion." Clinical Physiology and Functional Imaging 22.5 (2002): 307-311.
6) You, Yi-Qian Nancy, et al. "Effects of medium-chain triglycerides, long-chain triglycerides, or 2-monododecanoin on fatty acid composition in the portal vein, intestinal lymph, and systemic circulation in rats." Journal of Parenteral and Enteral Nutrition 32.2 (2008): 169-175.
7) Iber, F. L. "Relative rates of metabolism MCT, LCT and ethanol in man." Zeitschrift fur Ernahrungswissenschaft. Journal of nutritional sciences. Supplementa 17 (1974): 9-16.
8) Krotkiewski, M. "Value of VLCD supplementation with medium chain triglycerides." International Journal of Obesity 25.9 (2001): 1393-1400.
9) Souza, Paulo FA, and Dermot H. Williamson. "Effects of feeding medium-chain triacylglycerols on maternal lipid metabolism and pup growth in lactating rats." British journal of nutrition 69.3 (1993): 779-787.
10) Metges, Cornelia C., and Günther Wolfram. "Medium and long chain triglycerides labeled with 13C: a comparison of oxidation after oral or parenteral administration in humans." The Journal of nutrition 121.1 (1991): 31-36.
11) Papamandjaris, A. A., et al. "Endogenous fat oxidation during medium chain versus long chain triglyceride feeding in healthy women." International journal of obesity 24.9 (2000): 1158-1166.
12) Binnert, C., et al. "Influence of human obesity on the metabolic fate of dietary long-and medium-chain triacylglycerols." The American journal of clinical nutrition 67.4 (1998): 595-601.
13) Hawley, John A., Fred Brouns, and Asker Jeukendrup. "Strategies to enhance fat utilisation during exercise." Sports Medicine 25.4 (1998): 241-257.
14) Wang, Ying, et al. "Medium chain triglycerides enhances exercise endurance through the increased mitochondrial biogenesis and metabolism." PloS one 13.2 (2018): e0191182.
15) Clegg, Miriam E. "Medium-chain triglycerides are advantageous in promoting weight loss although not beneficial to exercise performance." International journal of food sciences and nutrition 61.7 (2010): 653-679.
16) Gomes, Rodrigo Vitasovic, and Marcelo Saldanha Aoki. "Does medium chain triglyceride play an ergogenic role in endurance exercise performance?." Revista Brasileira de Medicina do Esporte 9.3 (2003): 162-168.
17) Nosaka, Naohisa, et al. "Medium-chain triglycerides with maltodextrin increase fat oxidation during moderate-intensity exercise and extend the duration of subsequent high-intensity exercise." Journal of Oleo Science 67.11 (2018): 1455-1462.
18) Fukazawa, Ayumi, et al. "Effects of a Ketogenic Diet Containing Medium-Chain Triglycerides and Endurance Training on Metabolic Enzyme Adaptations in Rat Skeletal Muscle." Nutrients 12.5 (2020): 1269.
19) Van Zyl, C., et al. "Effects of medium-chain triglyceride ingestion on carbohydrate metabolism and cycling performance." Clinical Science and Molecular Medicine 87.s1 (1994): 30-31.
20) Schek, Alexandra, et al. "Fats in sports nutrition. Position of the working group sports nutrition of the German Nutrition Society (DGE)." Ernahrungs Umschau 66.9 (2019): 181-188.
21) Horowitz, Jeffrey F., et al. "Preexercise medium-chain triglyceride ingestion does not alter muscle glycogen use during exercise." Journal of Applied Physiology (2000).
22) Misell, L. M., et al. "Chronic medium-chain triacylglycerol consumption and endurance performance in trained runners." Journal of sports medicine and physical fitness 41.2 (2001): 210.
23) Goedecke, Julia H., et al. "The effects of medium-chain triacylglycerol and carbohydrate ingestion on ultra-endurance exercise performance." International journal of sport nutrition and exercise metabolism 15.1 (2005): 15-27.
24) Angus, Damien J., et al. "Effect of carbohydrate or carbohydrate plus medium-chain triglyceride ingestion on cycling time trial performance." Journal of Applied Physiology (2000).
25) Bach, AiC, and V. K. Babayan. "Medium-chain triglycerides: an update." The American journal of clinical nutrition 36.5 (1982): 950-962.
26) Kehayoglou, K., P. Kostamis, and B. Malamos. "The effect of medium-chain triglyceride on 47calcium absorption in patients with primary biliary cirrhosis." Gut 14.8 (1973): 653-656.
27) Harrison, Joan E., et al. "Effect of medium chain triglyceride on fecal calcium losses in pancreatic insufficiency." Clinical biochemistry 6 (1973): 136-140.
28) Tandon, Rakesh K., John B. Rodgers, and John A. Balint. "The effects of medium-chain triglycerides in the short bowel syndrome." The American journal of digestive diseases 17.3 (1972): 233-238.
29) Bavdekar, Ashish, Sheila Bhave, and Anand Pandit. "Nutrition management in chronic liver disease." The Indian Journal of Pediatrics 69.5 (2002): 427-431.
30) Łoś-Rycharska, Ewa, Zuzanna Kieraszewicz, and Mieczysława Czerwionka-Szaflarska. "Medium chain triglycerides (MCT) formulas in paediatric and allergological practice." Przeglad gastroenterologiczny 11.4 (2016): 226.
31) Avgerinos, Konstantinos I., et al. "Medium chain triglycerides induce mild ketosis and may improve cognition in Alzheimer's disease. A systematic review and meta-analysis of human studies." Ageing Research Reviews 58 (2020): 101001.
32) Reger, Mark A., et al. "Effects of β-hydroxybutyrate on cognition in memory-impaired adults." Neurobiology of aging 25.3 (2004): 311-314.
33) Henderson, Samuel T., et al. "Study of the ketogenic agent AC-1202 in mild to moderate Alzheimer's disease: a randomized, double-blind, placebo-controlled, multicenter trial." Nutrition & metabolism 6.1 (2009): 31.
34) Abe, Sakiko, Osamu Ezaki, and Motohisa Suzuki. "Medium-chain triglycerides in combination with leucine and vitamin D benefit cognition in frail elderly adults: a randomized controlled trial." Journal of nutritional science and vitaminology 63.2 (2017): 133-140.
35) Cunnane SC, et al. Can Ketones Help Rescue Brain Fuel Supply in Later Life? Implications for Cognitive Health during Aging and the Treatment of Alzheimer's Disease. Front Mol Neurosci. (2016).
36) Islam, A. M., et al. "A review of recent developments on the regulatory, structural and functional aspects of gum arabic." Food Hydrocolloids 11.4 (1997): 493-505.
37) Titgemeyer, Evan C., et al. "Fermentability of various fiber sources by human fecal bacteria in vitro." The American journal of clinical nutrition 53.6 (1991): 1418-1424.
38) Michel, C., et al. "In Vitroprebiotic effects of Acacia gums onto the human intestinal microbiota depends on both botanical origin and environmental pH." Anaerobe 4.6 (1998): 257-266