

## MCT/Butyrate Liquid w/SunButyrate™

### DESCRIPTION

MCT/Butyrate Liquid from Douglas Laboratories combines two unique ingredients to fuel the brain by way of ketone production. Ketones are energy-producing molecules made from fatty acids such as medium-chain triglycerides (MCT) and butyrate triglycerides. MCT/Butyrate Liquid provides highly concentrated caprylic acid and butyric acid in a pleasant, lemon vanilla-flavored liquid featuring SunButyrate™, a novel ingredient that provides stable, tasty butyrate. ‡

### INDICATIONS

- Supports cognitive function and ketone production ‡

### FUNCTIONS AND MECHANISMS OF ACTION

Medium-chain triglycerides (MCTs) are commonly found in natural sources, including butter, coconut and palm oil. They consist of fatty acids with 8-12 carbons, mainly C8 and C10, which are more ketogenic than long-chain triglycerides due to their unique absorption and metabolic characteristics. Aside from conditions that involve energy restriction, the most common way to induce controlled dietary ketosis is with MCTs. The brain cannot use oxidizable fats as an energy source because they cannot readily cross the blood-brain barrier. The water-soluble, lower molecular weight ketone can cross and provide neurons with an efficient energy source. In fact, during ketosis, ketones can serve as ATP substrates to supply as much as 70% of the brain's energy to meet its metabolic demand. Ketones that cross the blood-brain barrier have been shown to be neuroprotective, as they enhance mitochondrial respiration and promote oxidative defense and NAD<sup>+</sup>/NADH ratio. In a human intervention study involving eight healthy adults, administration of 30 g MCT to increase ketone concentration resulted in a 9% increase in overall brain energy metabolism, without altering brain glucose consumption. MCT consumption also supports a healthy blood glucose response and increases levels of satiety hormones more than long-chain triglycerides. ‡

Endogenous butyrate is produced by anaerobic bacterial fermentation of polysaccharides/fiber in the colon and is the favored source of fuel for colonocytes. Research suggests that SCFAs activate key players in the regulation of energy metabolism in the gut, as well as healthy gene expression for mucin production, thereby supporting tight-junction assembly and a healthy intestinal barrier. Research in animals shows that butyrate supplementation supports ketosis by its induction of FGF21 in serum, liver and adipocytes to stimulate  $\beta$ -oxidation and endogenous ketone production.  $\beta$ -oxidation of fats is a mechanism for ketone body production. The liver is capable of metabolizing mobilized fat to produce ketones that can be used by the mitochondria as an ATP substrate, reportedly with greater efficiency than glucose. Supplementation with butyrate has been found to be significantly more ketogenic than leucine, L-carnitine or octanoate-monacylglycerol. ‡

Butyrate typically has poor palatability and is easily degraded by stomach acid, preventing delivery to the colon. SunButyrate™ brand offers a light and pleasant-tasting triglyceride form designed to protect butyrate from degradation in the stomach and upper GI tract. GI models and in-vitro tests reveal only 6-8% breakdown of SunButyrate™ in the stomach compared to 70% breakdown in other butyrate forms, while also maintaining 90% integrity in the intestine.

### SOURCING

MCT is sourced from coconut and palm oils.

SunButyrate™ is sourced from high oleic sunflower oil & butyrate triglycerides

**MCT/Butyrate Liquid  
w/SunButyrate™**

**FORMULA (#57689-460X)**

1 tablespoon (15ml):

Calories.....	130
Total Fat.....	14 g
Saturated fat .....	10 g
Medium Chain Triglycerides .....	8.6 g
Providing 8 g Caprylic Acid (C8)	
SunButyrate™ Butyrate Triglyceride	
Providing 965 mg butyric acid .....	5 g

Other Ingredients: lemon oil, natural vanilla flavor, mixed tocopherols (from sunflower), and rosemary extract

**Non-GMO, Gluten-free**

 SunButyrate™ is a trademark used under license

**SUGGESTED USE**

Take 1 Tbsp, 1-3 times daily with meals, or as directed by a health professional.

**SIDE EFFECTS**

No adverse side effects reported.

**STORAGE**

Store in a cool, dry place, away from direct light. Keep out of reach of children.

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**For more information on MCT/Butyrate Liquid visit [douglaslabs.com](http://douglaslabs.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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DL57689-0519