

Acacia Fiber

TECHNICAL SUMMARY

Acacia fiber is a type of soluble fiber harvested from the sap of the acacia tree, which is native to parts of Africa, Pakistan, and India. Soluble fiber, as part of the diet, can help to encourage intestinal regularity.* It also acts as a prebiotic that supports the vitality of the microorganisms that help maintain a healthy GI environment.* Acacia fiber is generally well tolerated and can be used daily.

Structure Formula:

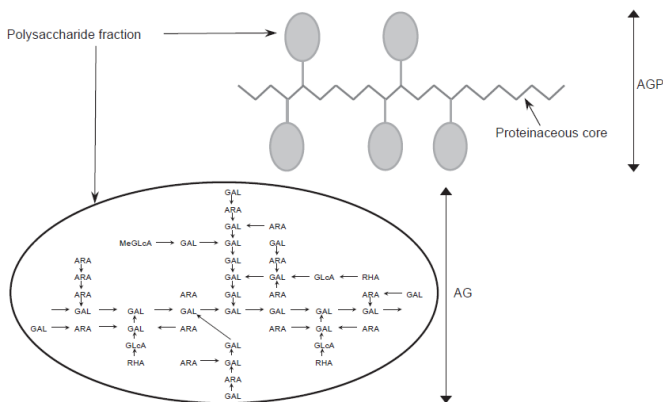


Figure 1

Chemical Structure:

Acacia gum is a natural polysaccharide derived from the sap of Acacia trees (*A. Senegal*, *A. seyal*). It is naturally found as a mix of calcium, magnesium and potassium salts.

Acacia gum is comprised of three major groups of complex compounds. The main fraction (88-90% of the total gum weight) is constituted of arabinogalactans (AG). They are polysaccharides of β -(1,3) galactose, highly branched with units of rhamnose, arabinose and glucuronic acid.

The second fraction (10% of total gum weight), is a higher-molecular weight arabinogalactan-protein (AGP) complex in which arabinogalactans (AG) are linked to a protein chain (Figure 1).

The third fraction (1% of total gum weight), is a low-molecular weight glycoprotein.

Allergen and Additive Disclosure: Not manufactured with yeast, wheat, gluten, soy, milk, egg, fish, shellfish or tree nut ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

Delivery Form: Powder

ROLE AS NUTRIENT/FUNCTION

Acacia gum is a dietary fiber and a prebiotic.* Dietary fiber is a general term covering a wide variety of substances which are neither digested nor absorbed in the small intestine. These substances include insoluble fibers, such as cellulose and hemicelluloses, and soluble fibers sub-classified as 'high viscosity' (guar, pectins, etc.) and 'low viscosity' (acacia gum, fructo-oligosaccharides, etc.). The health properties of dietary fibers depend

Supplement Facts

Serving Size 1 Level Tablespoon (approx. 6.5 g)
Servings Per Container about 52

	Amount Per Serving	% Daily Value
Calories	25	
Total Carbohydrate	6 g	2%**
Dietary Fiber	6 g	21%**
Soluble Fiber	6 g	†
Organic Acacia Gum Powder (<i>Acacia seyal</i> / <i>Acacia senegal</i>)	6.5 g (6,500 mg)	†

** Percent Daily Values are based on a 2,000 calorie diet.

† Daily Value not established.

Other ingredients: None.

- **Intestinal Health***
- **6 g Soluble Fiber**

SUGGESTED USAGE: Mix 1 level tablespoon daily into at least 8 oz. of water or juice, or as directed by your healthcare practitioner. Due to fiber content, be sure to drink plenty of additional fluids throughout the day. For those sensitive to fiber, start with 1 teaspoon daily and gradually increase to 1 tablespoon.

upon their physicochemical attributes.* Acacia gum has both hydrophilic and hydrophobic affinities. It has a high water solubility and a relatively low viscosity. It can be dissolved in water at a concentration up to 50% w/v, forming a fluid solution. Because of these physicochemical attributes, it has the potential to beneficially modify the physiological state of the GI tract.*

A prebiotic is defined as a non-digestible food ingredient that beneficially affects the host's health by selectively stimulating the growth and/or activity of a limited number of helpful bacteria in the colon.*

More than 20 studies have been performed to explore the relationship between acacia gum and colonic microflora.*

Acacia gum may also impact lipid metabolism through various mechanisms and the clinical significance of this effect is still not clear.* Some studies have suggested that the viscosity of fermentable dietary fibers contributes to their action on lipid metabolism.* Other possible mechanisms involved may be linked to increased bile acid excretion or a modification of digestion and absorption of lipids.* Dietary fibers are also believed to sequester bile acids, diminishing their active reabsorption in the ileum and leading to their excretion in feces.*

Additionally, some laboratory data suggest that acacia gum possesses free radical-quenching properties.* Finally, acacia gum is known for its resistance to hydrolysis by salivary enzymes and local buccal flora, which could explain its non-cariogenic properties.*

NATUROKINETICS®

Liberation: This product is in the form of a powder which is to be mixed with water; therefore liberation is not applicable.

Absorption: Acacia gum, in its native form, is not absorbed in the digestive tract. However, short-chain fatty acids (SCFA) resulting from its fermentation in the colon are absorbed and generate an estimated caloric value of 1.7 kcal/g.

Distribution: Non-metabolized acacia gum remains in the GI tract where it exerts its functions as a fiber and prebiotic.*

Metabolism: The highly branched structure of acacia gum makes it highly resistant to hydrolysis in acidic media (stomach) and by enzymes (mouth, small intestine). Therefore acacia gum is not digested in the small intestine and reaches the colon nearly intact.

It is then fermented by bacteria present in the colon, leading to the synthesis of SCFA, particularly propionic acid, which are metabolized by epithelial cells of the intestinal wall and other peripheral tissues, such as the liver.

Elimination: Acacia gum is almost entirely fermented in the colon.

CLINICAL VALIDATION

- In a randomized, blinded, placebo-controlled study on 10 healthy volunteers ingesting 10 g per day of a proprietary form of acacia gum for 10 days, *Lactobacilli* and *Bifidobacteria* counts in feces were significantly increased vs. placebo ($p < 0.05$), and *Bifidobacteria* growth was more prominent in subjects whose basal fecal concentration was less than 9.5 log CFU/g. The overall bulking index for acacia gum was 1.6 g of added stool per gram of ingested gum.
- In a randomized, double-blinded, controlled vs. inulin study on 54 healthy volunteers ingesting up to 40 g per day of a proprietary form of acacia gum for 28 days, *Lactobacilli* and *Bifidobacteria* counts in feces were significantly increased (respectively, $p < 0.05$ and $p < 0.01$) vs. baseline in the 10 g/d group.

SAFETY INFORMATION

Tolerability: In contrast to other low-viscosity fibers, clinical studies demonstrate that ingestion of up to 50 g per day, acacia gum is generally well tolerated. This high gut tolerance may be explained by progressive fermentation along the colon. The high molecular weight, the high degree of branching and the compact structure make attack by bacteria difficult and slow. A slow fermentation lowers total gas production and avoids painful bloating and flatulence.

Some cases of sensitization to acacia gum have been described, mainly as an occupational condition. It has also been described in atopic individuals with pollen sensitization. Caution is therefore recommended for use in individuals with known sensitization.

Contraindications: None known.

INTERACTIONS

Drug Interactions: Acacia can reduce the absorption of amoxicillin. Separate dose times by at least 4 hours.

Supplement Interactions: None known.

Interaction with Lab Tests: None known.

STORAGE

Store at ambient temperatures (no more than 90° F) in a tightly sealed container. Maintain at less than 60% relative humidity. Protect from moisture and avoid condensation.