



SALMATE[®] embracing life



A UNIQUE OMEGA-3 FATTY ACID ENCAPSULATED DRY PRODUCT WITH EPA AND DHA



www.salmate.com

SALMATE® and the Immunological Effect of EPA and DHA in Companion Animals

The term “essential fatty acid” refers to a fatty acid that cannot be synthesized in the body but is required for certain essential biological functions. Omega-3 (ω -3) (Linolenic) and Omega-6 (ω -6) (Linoleic) fatty acids are the most important. Not only is the total amount of these fatty acids in a ration important, but also is the ratio in which they occur.



SALMATE® is a natural source of Poly Unsaturated Fatty Acids (PUFA) such as Eicosapentaenoic acid (EPA – C20:5 ω -3) and Docosahexaenoic acid (DHA – C22:6 ω -3) from quality fish oil. The fish oil provides an excellent balance of EPA and DHA in proportions that help provide the best physiological and immunological response.

The Unique Features of SALMATE®

SALMATE® contains approximately 45% fish oil which, together with natural antioxidants, has been **encapsulated in a starch matrix** to provide the essential fatty acids:

EPA Eicosapentaenoic Acid (C20:5 ω 3)

DHA Docosahexaenoic Acid (C22:6 ω 3)

- A concentrated product allowing for a low inclusion rate or dose of administration
- A coating that prevents the oxidation of PUFA, which are very sensitive to oxygen, minerals and moisture
- A product that contains natural antioxidants
- A starch coating that allows for a target release of PUFA in the intestine
- A coating that prevents problems of feed intake often seen with other sources, and prevents handling problems in feed mills and farms (such as odors, liquid products, rancid products and storage)

The Importance of Fatty Acids

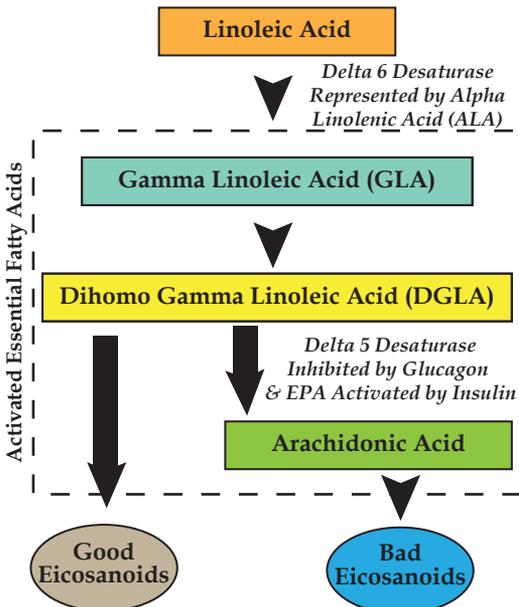
Essential Fatty Acids (EFA) are essential in the production of a group of compounds called eicosanoids. They serve as building blocks for several types of prostaglandins in the body. These prostaglandins ordinarily are involved in tissue remodeling, inflammatory response, muscle contractions, and wound healing.

The fatty acids from the two essential fatty acid families are used to produce prostaglandins. These are generally produced locally, using the available fatty acids (for example the uterus produces prostaglandins to help return with involution.) The C18:2 and C18:3 series of fatty acids compete for the use of the same enzymes. Thus, if there is an overwhelming amount of Omega-6 fatty acid, relative to Omega-3, then elongation and desaturation of the Omega-3 may not take place. Likewise, a large amount of Omega-3 will inhibit the formation of Omega-6 higher unsaturated fatty acids.

If we need PGF 3 series fatty acids, the provision of EPA and DHA in the diet helps to get around the problem of shortages of the enzymes needed for chain elongation.

Feed Type and Timing Produces the Best Results

Metabolism of Omega-6 Essential Fatty Acids



When feeding animals (including humans), we wish to try and produce 'Good Eicosanoids.' Within diets, excess arachidonic acid can be a major problem. It's the building block for bad eicosanoids, including thromboxane A₂ (which causes platelet clumping), PGE₂ (which promotes pain and depresses the immune system) and leukotrienes (which promote allergies and skin disorders.) In fact, arachidonic acid is so potent and so dangerous that when you inject it into the bloodstream of rabbits, the animals die within three minutes.

The balance of dihomo gamma linolenic acid (GGLA) to arachidonic in every cell in the body determines whether or not good or bad eicosanoids are made when that cell is stimulated by its external environment. The balance of DGLA to arachidonic acid is controlled by the activity of a single enzyme - delta 5 desaturase.

The more active the delta 5 desaturase enzyme, the greater the potential for manufacturing more arachidonic acid. The less active the enzyme, the greater the manufacture of DGLA. We want more DGLA.

Hormones, especially insulin and glucagon, control the activity of delta 5 desaturase. Delta 5 desaturase is activated by insulin and inhibited by glucagon. At the molecular level it is the dynamic balance of insulin and glucagon that allows one to regulate this enzyme.

Eicosapentaenoic Acid (EPA) is a regulator of the key enzymes that control the flow of Omega-6 essential acids as they progress toward their eventual eicosanoids destination. EPA is so important because it inhibits the activity of the delta 5 desaturase enzyme that makes arachidonic acid. Therefore, supplying EPA allows one to reduce the overproduction of bad eicosanoids. SALMATE® contains EPA and DHA in a stable form.

The Main Benefits of EPA and DHA

- Maintain joint flexibility
- Promotes a healthy, glossy coat
- Easily used in pet food manufacturing
- Boosts the animal's immune system
- These nutrients are essential additions to their diet
- Helpful for brain development (young) and against dementia (old)
- Extremely beneficial in helping maintain a healthy heart and good circulation
- EPA and DHA (Omega-3s) may help to maintain pain-free, supple and mobile joints in companion animals

