



## PRODUCT PROFILE SHEET

### The role of Omega-3 fatty acids in companion animals

Fats are a crucial component for a balanced diet in dogs and cats at all stages of their lives (puppies & kittens, adults and ageing animals) as they help to maintain healthy skin and a glossy coat, cell structure and function (including vision) and learning abilities<sup>1</sup>.

Omega-3 fatty acids are polyunsaturated fatty acids, **which are considered essential fatty acids in dogs and cats as they cannot be synthesized in the body and hence must be provided in the diet.** In addition, the role of omega-3 fatty acids on neurologic development, behaviour and reproductive health is key for companion animals, along with potential benefits on the immune system and glucose and lipid metabolism.

A majority of pets are fed with highly processed commercial diets, which often contain an unbalanced ratio of omega-6s to omega-3s. Omega-3 and omega-6 fats should be provided in a balanced ratio, which can be controlled through appropriate supplementation. Based on the current market trends where researched, high-quality and sustainable branded ingredients for human supplementation are in high demand for companion animals too, LEHVOSS Nutrition offers GOTab® to the pet food market as a great solution to include DHA and EPA into pet food supplements and treats.



### Product Advantages

- ✓ **The easiest way to add Omega-3 DHA and EPA** to treats and pet food supplements.
- ✓ **Unlimited versatility** that allows combination with other active ingredients.
- ✓ **Ideal particle shape and size** for excellent flowability and compression during tabletting production.
- ✓ **Flexibility in the colour, taste, shape or size of the tablet or treat** without compromising the fatty acids' stability.
- ✓ **Sustainable** Friend of the Sea and Dolphin Safe certified.
- ✓ **Fish Oils certified by Orivo as Pure Anchovy from the South Pacific**
- ✓ **NASC Preferred supplier** National Animal Supplement Council (USA).
- ✓ **Scientifically researched**

### Research

#### Omega-3 fatty acids and Skin Health

Supplementation of dietary fatty acids in dogs and cats is most commonly recommended for pruritic skin discomfort associated with hypersensitivity reactions, such as flea allergic dermatitis, atopic dermatitis, food associated hypersensitivity and idiopathic pruritus, along with eosinophilic granuloma complex in cats.

Dietary EFAs play an important role in the maintenance of water in the permeability barrier of the skin and normal cell functioning. According to research, dogs on 180 mg EPA and 120 mg DHA supplemented diets demonstrated considerable improvements in pruritus, alopecia, and coat appearance over time<sup>1</sup>.

#### Omega-3 fatty acids and Joint Health

Dogs of all breeds and ages are affected by osteoarthritis. Several studies have shown that omega-3 fatty acids have helpful impacts on the treatment of rheumatoid arthritis and walking ability<sup>2</sup>.

A study<sup>3</sup> worth highlighting was a randomized, double-blinded, placebo-controlled, crossover designed study conducted on 16 cats with radiologically documented, naturally occurring osteoarthritis.

The study was conducted for 10 weeks and results showed that cats with fish oil supplementation revealed higher activity levels, more walking, less stiffness, more interaction with the owner and higher jumps compared to those on placebo. Also, there was a positive owners' perception<sup>3</sup>.

## Omega-3 fatty acids and Cardiovascular Health

Cardiac diseases affect approximately 11% of dogs and 20% of feline populations<sup>2</sup> and concentration of EPA and DHA largely decreases in dogs with heart failure when compared to healthy dogs<sup>4</sup>. According to research, supplementation of omega-3 FA may help to decrease the production of inflammatory mediators, and have positive effects on endothelial function, myocardial energy metabolism, immune function and heart rate<sup>4</sup>.

The dose of omega-3 FAs currently recommended for dogs and cats with heart failure is 40 mg/kg EPA + 25 mg/kg DHA per day. The most appropriate source is fish, as studies have shown that dogs and cats are unable to use linseed or flaxseed oil due to inefficient conversion. Pets' diets should contain about 80 to 150 mg/100 Kcal of omega-3 FA and ratio of EPA:DHA of approximately 1.5:1<sup>4</sup>.

## Omega-3 fatty acid and Brain Development

Diets deficient in omega-3 FA are not optimal for early neural development. Deficiencies can lead to the development of functional abnormalities of the neural system in puppies. Therefore supplementing female dogs, and cats, during gestation and lactation with Omega-3 FA is recommended<sup>1</sup>.

Research conducted on cats suggests 25 mg EPA+ DHA per 1,000 kcal of MA (metabolizable energy) for pregnant cats and growing puppies after weaning<sup>1</sup> (metabolizable energy is the energy contained in the food that is actually absorbed by the body).

## Omega-3 fatty acid and Aggressive Behaviour

Behaviour problems are common in dogs. In a specific study, significantly lower quantities of DHA concentration and a prominently higher omega-6/omega-3 ratio were reported in German Shepherds dogs with aggressive behaviour in contrast to non-aggressive ones<sup>5</sup>.

## Omega-3 fatty acids and Reproductive Health

Nowadays, reproductive issues in canine species are one of the main concerns of breeders and veterinarians, who would normally seek for specific treatments. As indicated by the literature, poor sperm concentration and/or function are considered the major constraining factors of breeding programs. Several animal clinical research studies recommend that, fish-derived n-3 polyunsaturated unsaturated fats (PUFA) can have a beneficial effect on sperm motility and fertility<sup>1</sup>.

## Omega-3 fatty acids and Liver Health

Omega-3 FA has been found to support the reduction of kidney inflammation due to its anti-inflammatory effect and also, to improve the blood flow to the kidneys. Dosage of EPA and DHA recommended as adjunctive dietary treatment to support kidney disease is 140 (mg/kg)<sup>6</sup>.

## Benefits of Omega-3 fatty acids Supplementation in Puppies

Further to the benefits previously mentioned, it is relevant to highlight an interesting 1-year study, conducted on 48 beagle puppies, which received 1 of 3 foods (low-DHA, moderate-DHA, or high-DHA food) as their sole source of nutrition until 1 year of age<sup>7</sup>. The high-DHA group had significantly better results than the moderate-DHA and low-DHA groups, concluding that dietary fortification with fish oils rich in DHA following weaning may improve cognitive, memory, psychomotor, immunologic, and retinal functions in growing dogs.

## Manufacturing Process

The unique manufacturing process achieved by Golden Omega<sup>®</sup> allows the tabletting properties in GOTab<sup>®</sup> to be kept even with a high loading of 30% (w/w) omega-3 fish oil. **This offers the benefits of a DC powder with a high content of omega-3.**

The physical formation of FA complexes in GOTab<sup>®</sup> ensures that FA are maintained well and encapsulated at molecular level, and also that the hydrophilic surface of each complex is ready to interact with the next complex creating granules at powder stage and, ultimately, a tablet in which the high content of fats does not represent an issue. **This makes GOTab<sup>®</sup> the “true” direct compressible Omega-3 powder available on the market.**

Furthermore, the manufacturing process, technology and science behind GOTab<sup>®</sup> allow the following advantages:

- GOTab<sup>®</sup> powder is formed by rounded particles, the ideal shape to achieve the right flowability for tabletting.
- The particle size distribution of the powder helps to achieve an optimal filling in the tablet.
- The omega-3 fatty acids in GOTab<sup>®</sup> are well-protected at molecular level, allowing the GOTab<sup>®</sup> powder to be more “robust” than the fish oil raw material and reducing the typical oxidation process over time, typical in fish oils.
- Another advantage is the smell and taste of omega-3 in GOTab<sup>®</sup>, attractive for companion animals, which makes supplementation easier also in combination with other actives.

## Certifications

GOTab<sup>®</sup> holds a number of globally recognised certifications to ensure quality, sustainability, and safety in its omega-3 products:

- **ORIVO:** Certification verifying that the crude fish oil used in GOTab<sup>®</sup> production is pure anchovy sourced from the South Pacific.
- **Friend of the Sea:** Certification ensuring responsible management of wild fisheries and aquaculture, promoting sustainable marine practices.
- **Dolphin Safe:** Certification guaranteeing that no dolphins are harmed or killed as bycatch during the fishing process.

- IFOS (International Fish Oil Standards):** Rigorous third-party testing program that certifies omega-3 products for purity, potency, and compliance with international standards.
- NSF (Good Manufacturing Practice Certification):** Independent verification ensuring Golden Omega®'s facility meets strict cGMP standards for dietary supplement manufacturing.



## Product Safety

GOtab® utilizes high-quality raw materials approved for feed and considered against the list of undesirable substances stated in Directive 2002/32/EC. GOtab® is manufactured in the EU in an approved facility for production of feed additives covered by Regulation (EC) No. 1831/2003.

The levels of contaminants in all Golden Omega® fish oil concentrates, used to produce GOtab®, are far below the established EU regulatory guidelines.

## Product Range

Grade	Total Omega-3 (mg/g)	EPA + DHA (mg/g)	EPA (mg/g)	DHA (mg/g)
GOtab® 90/60	>180	>150	>90	>60

## Product Applications

GOtab® for Pets can be used tablets, treats, powders, and water-soluble solutions.



## Product Dosage

Based on the scientific studies reviewed, overall health support supplementation of EPA and DHA at 30 mg/kg BW is recommended in the diet of healthy dogs<sup>1</sup>. However, a deeper assessment is required to determine the levels of omega-3 DHA and EPA, as well as the ω-6:ω-3 fatty acid ratio required to benefit dogs' and cats' health and support specific discomforts and illnesses at various stages in their lives.

## The History Behind GOtab®

In 2007, a university spin-out company called Omegatri™ was founded based on the idea that omega 3s could be included in tablets. Omegatri™ conducted some research on the benefits, bioavailability and stability, and successfully developed a technological platform to include omega-3s into a direct compressible powder. The concept, "GOtab®", was launched in 2017 for human food supplements, in partnership with Golden Omega®, a leading manufacturer of fish oil concentrates. After a couple of years of cooperation, Golden Omega® acquired Omegatri™, now Golden Omega® Norway. Today, only Golden Omega®'s pure and high quality fish oil concentrates are used to produce GOtab®.

## About



Golden Omega® is a Chilean Company focused on producing high quality Omega-3 concentrates up to 700 mg/g of EPA and DHA obtained from fish oil. Golden Omega®'s state-of-the-art production facilities are located in Northern Chile, close to the raw material source. This guarantees an assured supply of high quality fish oil.

### References

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