


The fine art of protection

A microscopic image showing the intricate, wavy, and layered structure of fish skin cells. The cells are arranged in a complex, interconnected pattern, with some showing concentric rings and others showing more irregular, wavy boundaries. The overall appearance is that of a highly textured, protective barrier.

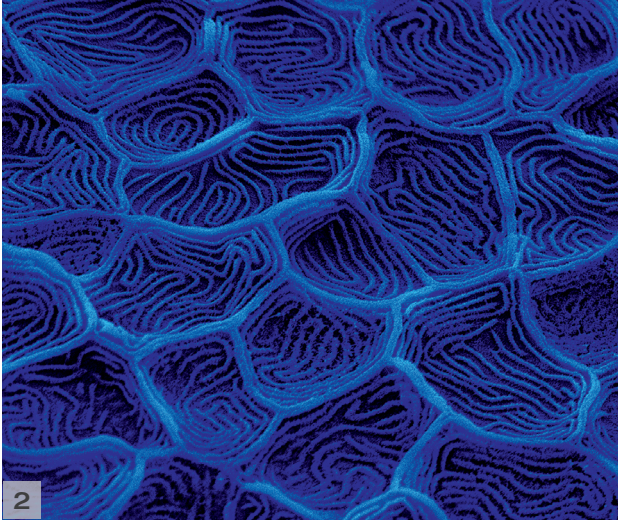
Protec™ is Skretting' prime functional feed for farmed fish. Protec™ helps to reinforce skin, gut and gills, it supports the immune systems and optimizes the balance between fish and environment.

protec™



Together the outer surfaces of the fish (skin, gut and gills) make an effective shield from environmental impacts.

Protec helps strengthen these essential barriers.

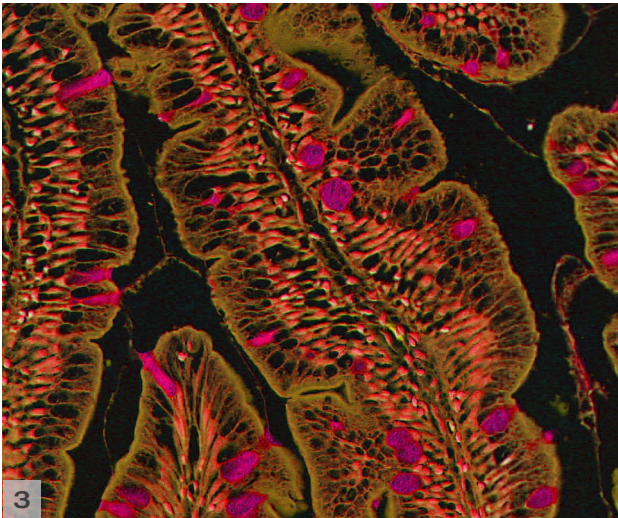


Gills

The gills comprise a large surface area of delicate cells that play a crucial role for the fish's respiration, osmoregulation and excretion. Protec™ supports immunity of the gills and aids mucous cell recovery.

Skin

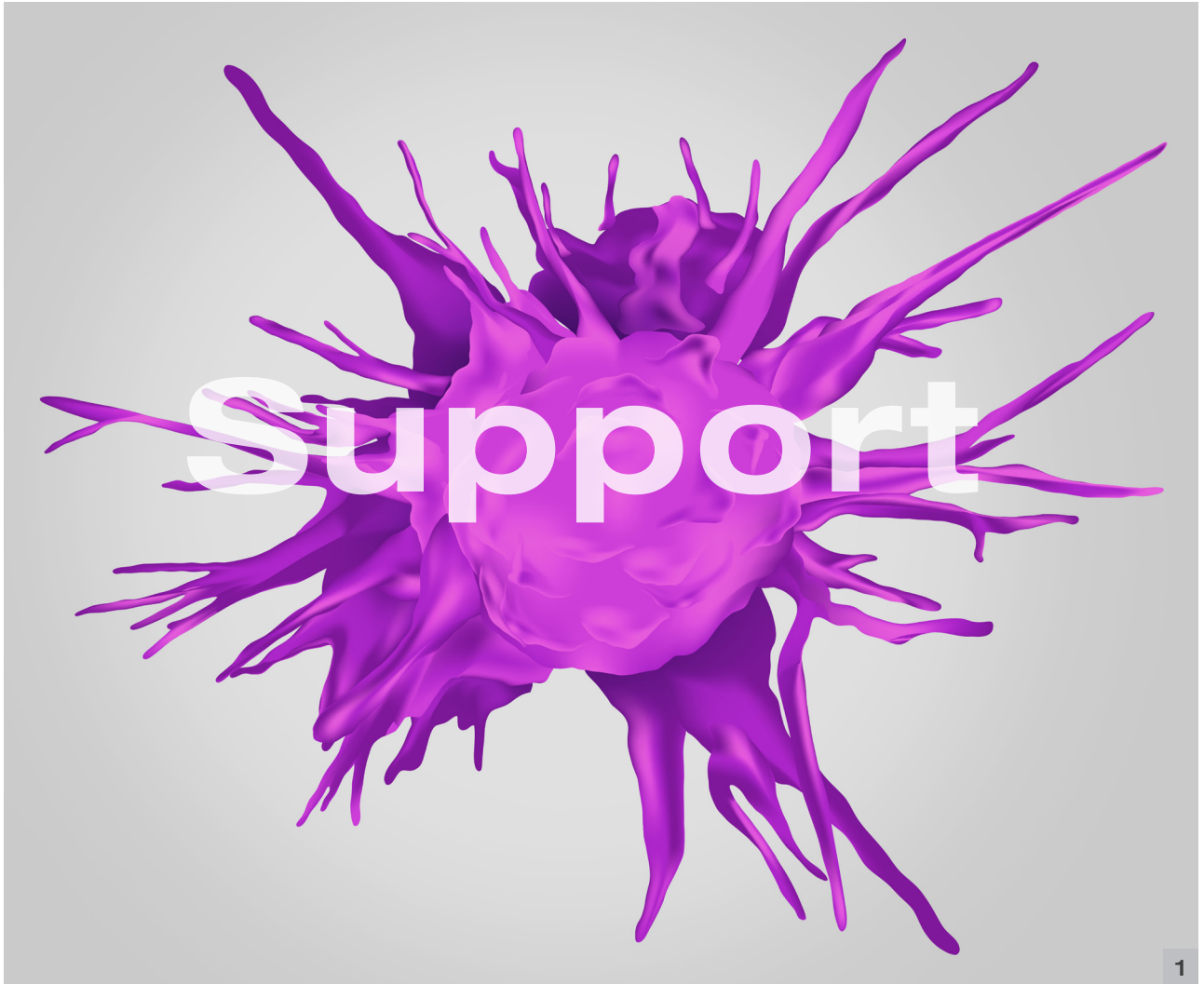
The skin with its mucus layer provides both a physical barrier and is a crucial component of immune defences. The skin faces a number of challenges including bacteria, parasites, chemicals and physical trauma. Protec™ supports the skin's natural function.



Gut

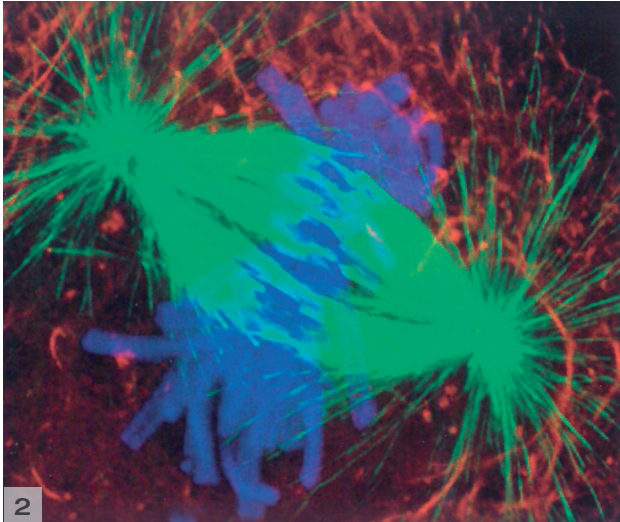
Even though the gut is located within the fish, it can be considered an external barrier. The gut can be damaged by pathogenic, chemical, traumatic or environmental stress. Protec™ improves gut structure.

1. Scanning electron micrograph of fish gills.
2. Scanning electron micrograph of fish skin surface.
3. Area of salmon gut stained to highlight structures.



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The fish' defense system is dependent on a strong immune response. Protec™ strongly supports immune function limiting oxidative stress and through this contributes to reduce inflammation.

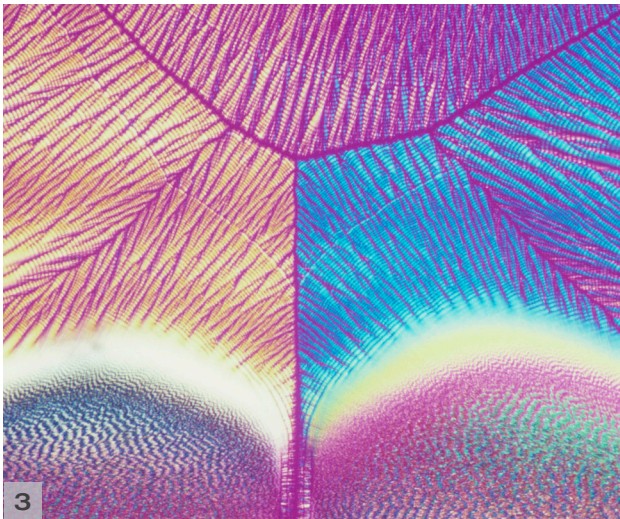


The immune system

Fish possess complex immune mechanisms. The defences can be challenged by infectious agents, trauma and environmental stress. Protec™ supports immune system.

Cell regeneration

Metabolic and immune processes demand high turnover of cells. Protec™ provides building blocks for new cells which are necessary for optimal fish health.



Anti-oxidative

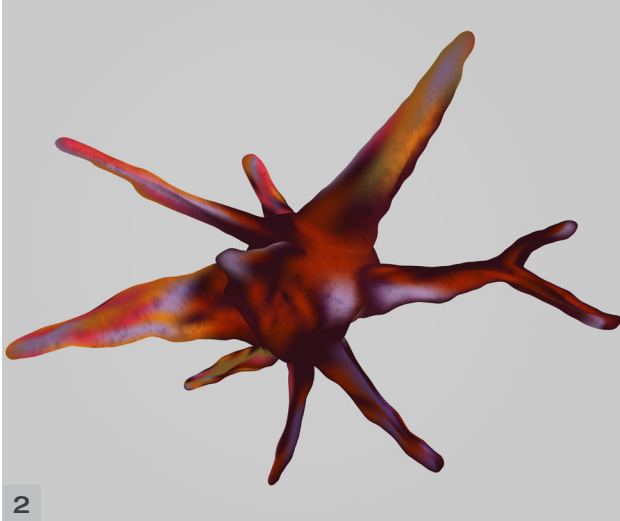
Unregulated cellular defence processes can lead to tissue damage through oxidative stress and uncontrolled inflammation. Protec™ supplies antioxidants to counter excessive oxidation and supports innate fish defences.

1. Tissue macrophage with short filopodia.
2. Fluorescent micrograph of a cell during metaphase.
3. Polarized micrograph of vitamin C crystals.



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Fish live in a potentially threatening environment and are vulnerable to critical changes in the surroundings. Protec™ contributes positively to maintain the complex balance between fish and environment.

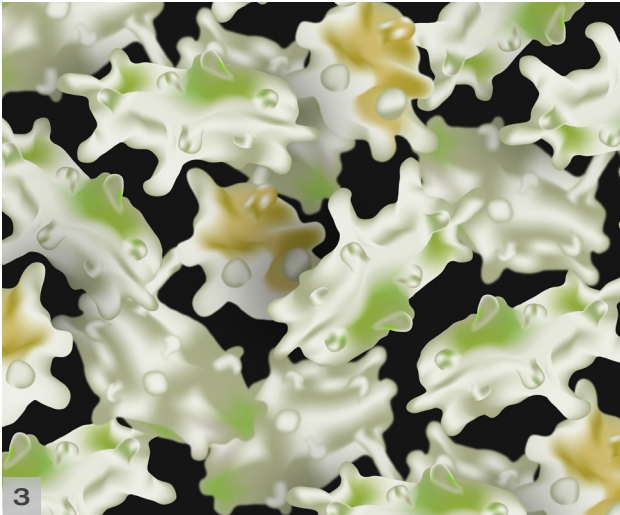


Bacteria

Bacteria are always present both in the water surrounding fish and within their intestines. While some cause disease, others are crucial for fish welfare.

Virus

Despite their tiny dimensions, viruses pose one of the greatest threats to fish health. Among the thousands of described viruses, many exist in aquatic systems where they can infect fish.



Parasites

Parasites have always been part of the natural environment and can evade fish defence mechanisms.

1. Stylized scanning electron micrograph of an enveloped virus.
2. Amoeba with extended pseudopods.
3. Scanning electron micrograph of bacteria from intestinal microbiota.

Skretting is the world leader in the production and supply of feed for farmed fish and shrimp. Total annual production of high quality feeds is approximately 1.5 million tonnes. Skretting has operating companies on five continents to produce and deliver feeds from hatching to harvest for more than 60 species of farmed fish and shrimp.