## **AQUACULTURE, ANIMAL NUTRITION**

## **IDEA / PROPOSAL:**

Inflammation is a natural process in animals aiming to restore balance following stress or injury. Under normal conditions, inflammation is self-regulatory, but when it fails, it can become chronic, leading to tissue damage and impaired function. Omega-3 fatty acids (EPA and DHA) are known to play a key role in modulating inflammatory processes, yet their specific effects and associated lipid mediators remain poorly understood in fish. In aquaculture, the shift toward alternative feed ingredients has reduced dietary n-3 fatty acid availability, which may disrupt inflammatory regulation and compromise fish health and fillet nutritional quality. This study aims to identify and quantify key lipid mediators involved in inflammation in fish, providing new insights into their physiological relevance and implications for aquaculture nutrition.

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