

# PROGRESS TOWARDS TARGETING DISEASE PROPHYLAXIS IN EUROPEAN FISH FARMING (TARGETFISH)

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TargetFish is a large collaborative project funded by the European Commission under the 7th Framework Programme for Research and Technological Development (FP7) of the European Union (Grant Agreement 311993). The project will run for 5 years, started in November 2012 and thus is approximately halfway. TargetFish brings together a large number of leading European research groups (RTD) that are experts on fish pathology and immunology and small-to-medium enterprises (SME) as well as some larger industries from the Biotech and Veterinary sectors, which all share a common interest and experience: vaccination of fish. To achieve this challenging task, we brought together approximately 30 partners from 10 EU member states, two associated countries and one International Cooperation Partner Country (Chile). In this large multidisciplinary consortium an approximate equal number of RTD and SME partners cooperate closely while keeping an intensive communication with the vaccine and nutrition industries. The main objectives of the project are to: 1) generate knowledge by studying antigens and adjuvants for different routes of administration while analyzing the underpinning protective immune mechanisms; 2) validate this knowledge with response assays for monitoring vaccine efficacy and safety, including issues associated with DNA vaccines; 3) approach implementation of prototype vaccines shortening the route to exploitation and 4) optimize vaccination strategies in order to obtain maximum protection in different sizes of fish. At present, progress has been made in particular with regard to main objectives 1-3. The vaccine delivery systems under investigation include oral routes of administration using, for example, alginate microencapsulation and MicroMatrix™ technologies. TargetFish also focuses on investigating mucosal vaccination routes and associated immunity and in developing antigens and adjuvants specifically suited for mucosal delivery. Most fish vaccines on the market are delivered by injection, being this a labour-intensive, expensive method that provokes stress in the fish. Mucosal vaccination routes (immersion or oral) would certainly be more desirable.

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