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TargetFish brings together leading European research groups that are experts on the fish immune system and enterprises from the Biotech and Veterinary sectors that aim to commercialize fish vaccines for European fish farming. By developing a targeted vaccination strategy, TargetFish will prevent important fish diseases in European aquaculture industry.
This highlight is part of monthly progress updates by the TargetFish consortium.

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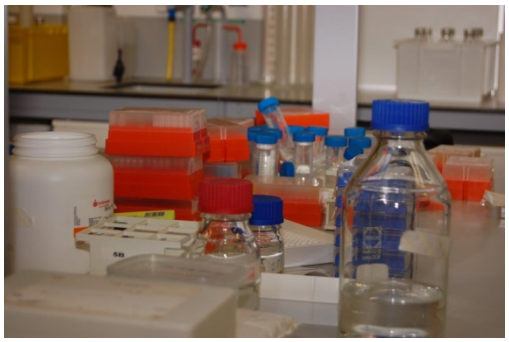
Zebrafish are increasingly important model animals for aquaculture-related questions

The zebrafish is a freshwater teleost of the cyprinid family and an established model organism in many fields of research, including cancer research. Not surprising, considering the shorter evolutionary distance, zebrafish are likely to play an increasing role as model organism in many fields of research important to finfish aquaculture. This will be true especially for areas in which zebrafish offers further research potential including genomics, early development, reproduction and immunology. Zebrafish already provide model systems for studying infectious diseases of humans, such as tuberculosis, and studies of infections of zebrafish with pathogens common to aquaculture are increasing rapidly.



A review by researchers from the Cell Biology and Immunology group at Wageningen University, The Netherlands summarizes the present knowledge of Toll-like receptor (TLR) signalling factors in zebrafish. Studies in zebrafish benefit from the high conservation level of innate immune responses throughout vertebrate evolution. Zebrafish provide detailed knowledge and facilitate functional analysis of the recognition, by TLRs, of molecular patterns unique to pathogens. The review discusses possibilities for future research approaches that can complement studies in cell cultures. Attention is also paid to the comparison of zebrafish and common carp which, although with very different body mass, are genetically close relatives.

From a practical viewpoint it is important to realize that TLRs are a receptor family considered extremely important for recognition of pathogens and building up of innate immunity. Further, TLRs are considered crucial modulators of protective immunity co-induced by adjuvants, normally present in many fish vaccines.

Read the full article

TargetFish 2nd Industry Workshop

The 2nd TargetFish Industry Workshop held during the 17th International Conference of the European Association of Fish Pathologists (EAFP) in Gran Canaria, Las Palmas in September 2015 was a great success.

Two years onwards from the 1st TargetFish Industry Workshop in Tampere, Finland, we could highlight the achievement of a number of significant discoveries. Among the achievements discussed in Gran Canaria were the development of automated vaccination machines for small sized turbot or sea bass, but also progress on the development of prototype vaccines against Flavobacteriosis of salmonids and Nodavirus infections of sea bass. The significance of these developments for the aquatic animal health industry and how they may be taken forward into commercial applications were discussed with representatives from both, Academia and Industry.

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