

Use of a bacterial recombinant protein as a vaccine for fish

PATENTS

P201531020: Recombinant protein of the ferri-piscibactin receptor and its application for the production of an immunogenic composition against pasteurellosis

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Pasteurellosis or photobacteriosis is a serious bacterial disease affecting several marine fish species worldwide, including many of the most important in aquaculture. Although there some commercial vaccines based on inactivated whole bacterial cells, they do not give a complete and long-lasting protection against the disease, mainly in some cultured fish species of high commercial value like sole. Here we describe a new vaccine based in the use of a recombinant protein obtained from an outer membrane protein (ferri-piscibactin receptor) of *Photobacterium damsela* subsp *piscicida*, the causal agent of pasteurellosis. The protein was cloned, expressed and purified from an *Escherichia coli* strain.

ACHIEVEMENTS & RESULTS

Our results on vaccination of juvenile sole with this purified protein showed that a combination of this protein with an adjuvant gives a promising protection against pasteurellosis.

- Juvenile sole of 10 g were vaccinated with 10 µg of the purified protein plus Freund adjuvant.
- After 2 months of vaccination a challenge experiment was done with IP injection.
- The presence of specific antibodies against the protein were demonstrated by ELISA.
- The protection of the proposed vaccine gave RPS values near of 80%.
- There were not signs of toxicity of the protein in the vaccinated fish.

IDENTIFIED PURPOSES & ADVANTAGES

Prevention of pasteurellosis in juvenile sole can be achieved using this recombinant protein. The protein can be easily obtained from a culture of *E. coli*. There is no need to culture the bacterial pathogen. Toxic and inflammatory effects in vaccinated fish of the current vaccines can be avoided. There are not environmental risks.

DEVELOPMENT COLLABORATION OFFER

If this offer is of your interest or you need more information about it, please contact us. This offer can be materialized in a "**Partnership Agreement**" to adapt this technology to your research areas, or in a "**License Agreement**" to use this patent directly.

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