

DESCRIPTION FOR THE GENERAL PUBLIC (IN ENGLISH)

The aim of the project will be the genotypic characterization of *S. putrefaciens*, bacteria causing shewanellosis in freshwater fish. The pilot studies conducted by the Department of Fish Diseases, National Veterinary Research Institute in Pulawy (ZCHR NVRI) determined at least three different species within the examined group of bacteria collected from freshwater fish. These interesting and promising results of preliminary researches are essential to carry out the further work on genetic diversity among collected isolates using the known techniques for genetic typing such as ERIC-PCR-RFLP and PFGE. These methods, which define similarities in selected regions of the bacteria genome, will allow to evaluate the variability and diversity of bacteria *S. putrefaciens*. This variability could be manifested by the ability both, to induce and develop the disease in fish, as well as adaptation of the bacteria to the freshwater environment. The differences are also visible on the phenotypic level, as demonstrated in previous studies carried out in ZCHR NVRI.

Bacteria *S. putrefaciens* are known as a halophilous group of microorganisms, considered as an important factor involved in the spoilage process of food, mainly marine fish stored under the fridge conditions. These bacteria are usually isolated from salty and brackish water, and in recent years, also from the freshwater environments. At last 10 years, *S. putrefaciens* were isolated from different species of freshwater fish in which serious health problems and mortalities up to 20% have been observed. The most interesting is that these bacteria are also isolated from fish which do not exhibit any clinical signs of the disease. In the world, the first infections caused by *S. putrefaciens* were observed among freshwater fish (common carp and rainbow trout) cultured in Poland. Increasing knowledge of the genotype diversity of this group of bacteria is essential, taking into consideration the growing risk of infection with *S. putrefaciens* for the health status of freshwater fish cultured in our country.