

## ISO-CERTIFIED FISH CELL TOXICITY TEST

### Problem – Challenge

In 2017, more than 7,500 ecotoxicological tests were carried out on fish in Switzerland alone with the aim of protecting humans, animals and the environment. For many years, Eawag has been researching alternatives in order to reduce or even replace fish experiments. One of these alternatives involves experiments with a gill cell line of rainbow trout (RTgill W1 cell line), which can be used to reliably determine the acute toxicity of water samples and many chemicals to fish.

### Solution

Eawag's Department of Environmental Toxicology has continuously refined the method over the last few years. In an international round-robin study, six laboratories from industry and academia took part and determined the robustness, transferability and comparability of the method with the RTgill-W1 cell line on the basis of six selected test chemicals. The results show that all laboratories were able to provide reproducibly comparable results using this procedure.

This methodology has recently also been extended to comply with ISO standards, which serve as standard references for researchers and manufacturers. The method is useful for e.g. effluent testing or in product development in order to decide in advance whether an animal experiment is worth carrying out or the product should further be pursued.

Yet, in order to replace fish tests for chemicals completely, regulators require an OECD norm first, thus an OECD submission is currently in preparation. Thanks to the ISO certification, the chances are good that the OECD fish cell test will soon be established. The Eawag spin-off aQuaTox-Solutions Ltd. offers animal-free alternative testing methods that are focusing on fish cells and fish embryos as test models. Of course they also have adopted the ISO certified-method as a service for industry and environmental authorities.



Images Empa