



Original thinking... applied

Bioaccumulation in Fish Test

This test is designed to assess the bioconcentration potential of substances in fish, following aqueous (standard and minimised tests) or dietary exposure, under flow-through conditions.

Irrespective of dose route, the test consists of two phases – an uptake phase and a depuration phase.

During the test's uptake phase, the fish are exposed to test compound at one or to concentrations dependent upon the properties of the test chemical. This phase lasts from seven to 14 days although in some cases it may be extended. The chemical concentration in the fish may not reach steady state in this phase, so results are normally based on the kinetic analysis of tissue residues.

For the depuration phase the fish are transferred to a tank free of test item, or switched to a diet free of test compound. This phase normally lasts for up to 28 days (or until the test substance can no longer be quantified in whole fish, whichever is soonest). However, this phase can also be shortened or lengthened beyond 28 days, depending on the size of the fish being tested and the change with time of chemical concentrations in the fish.

We measure the concentrations of the test substance in the fish in both the uptake and depuration phases.

We also hold a control group of fish in identical conditions and feed this group identical fish food to the test fish, minus the test substance. This allows us to quantify background levels of the test substance in the unexposed fish and allows a comparison to be made with any effects identified in the fish tested with the chemical. It also enables us to compare growth rate constants between the groups.

Test guidelines and references

OECD 305: Bioconcentration: Flow-through Fish Test.

US-EPA: OPPTS 1730.850.

FERA'S WORK IN AQUATIC ECOTOXICOLOGY

Fera offers a full package of studies to GLP compliant studies on aquatic organisms. Fera tests for the potential toxic effects of plant protection active ingredients and products, veterinary products, biocides, industrial chemicals and their significant metabolites in accordance with current OECD and if appropriate EPA guidelines, covering the requirements for the registration process.

All of Fera's studies are planned and performed by an experienced team of scientists and technical personnel, with the analytical dose verification and fate of the active ingredient(s) performed as close as possible in parallel to the biological part of the study. We can also adapt our services to provide bespoke tests that meet your specific data requirements.

MORE ABOUT FERA

Fera is based at the National Agri-Food Innovation Campus near York, UK.

We work closely with plant protection and veterinary medicine product manufacturers to help develop effective, sustainable and safe chemical products that minimise ecosystem impacts and pollution, while maximising the beneficial effects for crops, plants and animals.

Combining the extensive expertise of our scientists with advanced resources and GLP-compliant laboratories, we provide valuable support to companies in their chemical evaluation and registration efforts.

GET IN TOUCH

For more information and to book a test, call Fera on **+44 (0)300 100 0321**, email **sales@fera.co.uk** or visit **www.fera.co.uk/chemical-regulation**

