Aquatic Toxicology Services

Welcome to Eurofins Agroscience Services

We are a leading provider of product development consultancy and technical support to the crop protection, pharmaceutical, and chemical industries. Our technical activities involve conducting field and laboratory studies to determine the safety and efficacy of new chemicals and crop varieties. With over 30 years of experience, Eurofins Agroscience Services offers outstanding technical knowledge and project management skills to meet routine and non-routine client needs. By acquiring a carefully selected range of CRO's, we have created a unique portfolio of expertise that provides analytical, regulatory and field support to plant breeders, agrochemical, biopesticide, biocide, pharmaceutical and fine chemical manufacturers.

Aquatic Toxicology Services

Eurofins Agroscience Services offers a full suite of GLP studies on aquatic non-target organisms and microorganisms. All studies are planned and performed by an experienced team of scientists and technical personnel in accordance with the recent guidelines (OECD, OCSPP, ASTM, ISO, etc.), covering the requirements for domestic or global registration of plant protection products (PPPs), chemical products and environmental risk assessment (ERA) for pharmaceuticals. The analytical dose verification and fate of the active ingredient is performed as close as possible in parallel to the biological phase of the study.

Algae and Aquatic Plants

The toxic effects of PPPs, chemicals and metabolites on algae and aquatic plants are examined using different study designs in accordance with current OECD and EPA guidelines. Depending on demand, algae studies can be performed with different species of green algae, blue green algae or diatoms in static test designs. Aquatic plant studies can be performed either on Lemna, Myriophyllum or Glyceria, in static, semi-static and flow through test designs In addition we offer studies for the species sensitivity distribution approach (SSD). Several monocotyledonous and dicotyledonous species can be offered, for example Myriophyllum spicatum, Myriophyllum aquaticum, Myriophyllum sibiricum, Glyceria maxima, Nasturtium officinale, Egeria densa, Elodea canadensis, Heteranthera zosterifolia, Callitriche palustris, Ranunculus aquatilis, Veronica beccabunga, Spirodela polyrhiza, Wolffia arrhiza, Hippuris vulgaris and Ceratophyllum demersum. Other aquatic plants can be tested on demand.

Aquatic Invertebrates

We perform studies with freshwater and estuarine species including Daphnia, Ceriodaphnia, Chironomus, Gammarus, Mysid, Oyster, Crayfish, Asellus, Hyalella, Leptocheirus, Lumbriculus, Mayfly, Stonefly, Caddisfly, and others upon request. For all mentioned genera, when in-house cultures are not available, reputable commercial sources are utilized. Depending on demand, test designs can be adapted with respect to the test item, e.g. static, semi-static or flow-through test design, spiked sediment or spiked water test. To account for the requirements of higher-tier effect tests with additional species (more than ten further invertebrates) are available. Exemplary genera are: Chaoborus, Culex, Cyclopoida, Zygoptera, Ephemeroptera, Trichoptera, Daphnia obtusa, Daphnia pulicaria, Daphnia longispina and Daphnia curvirostris. For chronic toxicity evaluation, routine testing with the Daphnia reproduction test (OECD 211), mysid life-cycle, and sediment lifecycle testing with Chironomus, Hyalella, Leptocheirus, is available. Different combinations of invertebrate genus are offered in microcosm test design.

Fish and Endocrine Disruption Testing

Toxicity growth, and full-life cycle tests are offered with a variety of species including rainbow trout, carp, fathead minnow, medaka, sheepshead minnow, bluegill sunfish, Atlantic silversides, zebrafish, and other species as requested. Depending on the test item static, semi-static or flow through test designs are applied. Eurofins Agroscience Services is also the global leader in the evaluation of chemicals for endocrine disruption (ED) conducting numerous Fish Short Term Reproduction Assays (FSTRA, OECD 229) and Medaka Extended One-Generation Reproduction Tests (MEOGRT, OECD 240) each year.

Eurofins Agroscience Services Group

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Amphibians

Eurofins Agroscience services experience with amphibians began over a decade ago as a leading laboratory during the development of the US EPA Endocrine Disruptor Screening Program. Multiple species have been utilized including Xenopus spp. and Leopard Frog. We are the global experts in the evaluation of a test items ED potential successfully conducting Amphibian Metamorphosis Assays (AMA, OECD 231), Larval Amphibian Growth and Development Assays (LAGDA, OECD 241) covering all in vivo studies providing data on mechanistic and adverse effects (Level 3, 4 and 5) in addition to the Xenopus Eleutheroembryonic Thyroid Assays (XETA, OECD 248).

Bioaccumulation

Bioaccumulation studies (OECD 305; OPPTS) can be provided with hot and cold material and conducted utilizing rainbow trout, bluegill sunfish, and oysters. Bioaccumulation testing performed with fish (OECD 305) utilize an aqueous or dietary pathway to expose the fish to the test chemical. Bioaccumulation testing with aquatic (OECD 315) and terrestrial (OECD 317) oligocheates utilize dosed sediments or soils for the route of exposure. Analysis of the parent and/or metabolites are performed with chromatographic techniques and/or by liquid scinitillation counts for 14C labelled or non-labelled materials.

Diagnostic and Analysis of Microbiologicals

Aquatic studies (algae, daphnia, fish) with microbial pest control agents are performed in our laboratories, including accompanying analytics (also for terrestrial studies e.g. with aphidius, typhlodromus and Apis mellifera). Tests can be performed according to OCSPP and OECD test guidelines. Additionally, we offer method development, method validation, 5-Batch analysis, survivability studies and tests for microbial contaminants of MPCAs.

Accompanying Analysis

For all aquatic tests accompanying analytical determinations of the test item are required. The determinations are done in-house following SANCO/3029/99 rev. In addition, biomarker assessment using techniques such as ELISA, qPCR, etc. is available.

Eurofins Scientific Group

Eurofins Scientific is a life sciences company that serves a wide range of industries including the pharmaceutical, agricultural, food and environmental sectors.

Today the Eurofins Group is a leading provider of analytical services.