

ROTOXKIT F™

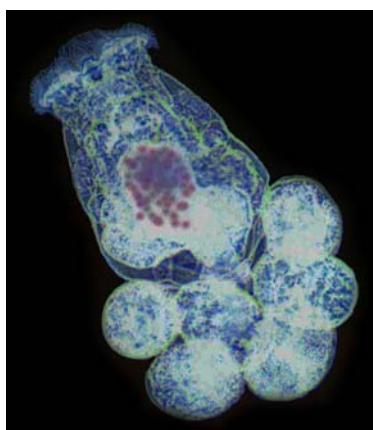
MICROBIOTESTS

Cost-effective, culture/maintenance free* bioassays
with the freshwater rotifer *Brachionus calyciflorus*

ROTOXKIT F

acute

Contains all the materials to
conduct six
24h mortality tests



**Test organisms are included in the
kits as “dormant eggs (cysts)”
which can be hatched “on demand”*

ROTOXKIT F

chronic

Contains all the materials to
perform three
48h reproduction assays



ROTOXKIT F™

24h Acute and 48h Short-Chronic Microbiotests

For Toxicity Screening of Pure Compounds - Effluents -
Sediments - Surface and Ground Waters - Wastewaters

The ACUTE ROTOXKIT F contains all the materials necessary to perform six acute toxicity tests and the SHORT-CHRONIC ROTOXKIT F three short-chronic bioassays. The test species is the freshwater rotifer* *Brachionus calyciflorus*.

* Rotifers are ecologically very important members of many aquatic communities. With copepod and cladoceran crustaceans they are the major constituents of freshwater zooplankton, with turnover rates which are higher than those of the crustaceans.

Easy to follow instructions and detailed illustrations are provided in the kits for the conduct of range-finding and definitive tests.. The test organisms are included in the kits as « dormant eggs (cysts)» which can easily be hatched on demand, in less than 24h, to supply the live biota for the conduct of the assays.

Endpoints

- The ACUTE ROTOXKIT F is a 24h assay based on mortality of the test organisms, with calculation of the 24hLC50.
- The SHORT-CHRONIC ROTOXKIT F measures the decrease in reproduction of the rotifers under toxic stress after 48h exposure, with calculation of the 48h median growth inhibition (48hEC50). NOEC and LOEC values can be determined with specific data treatment programmes.

Reproducibility

- Cysts of high quality produced in strictly controlled conditions preclude variability associated with recruitment/ maintenance of live stocks in conventional bioassays.
- Highly uniform quality of the test medium is achieved by simple dilution of concentrated solutions of selected salts with deionized water.
- Standardized microplate test containers constructed of biologically inert materials ensure uniform exposure conditions.
- A Quality Control Test with a reference chemical is described in detail, for accuracy and reproducibility check.

Cost-Effectiveness

- Cysts can be hatched on demand, eliminating the need and the costs of continuous culturing and maintenance of test organisms.
- Minimal equipment needed for test performance: dissecting microscope – small incubator – conventional laboratory glassware.
- Shelf-life of cysts guaranteed for several months when stored properly, reducing test scheduling constraints.

Contents

- Tubes with cysts, concentrated hatching and toxicant dilution medium, hatching/test containers and micropipettes for the transfer of the organisms.
- Detailed Standard Operational Procedure brochure, abbreviated Bench Protocol, data scoring sheets and graphical L(E)C50 calculation sheets.
- For the short-chronic tests : tubes with live microalgae immobilized in algal beads, a vial with matrix dissolving medium, tubes with a pre-feeding powder and a vial with Lugol fixative for easy counting of the rotifers.
- Specification sheet with batch number of the cysts, the media and the algal beads.

User-Friendliness

- Specially designed « all in one » microplates with hatching trough, rinsing troughs and 36 (acute) or 48 (short-chronic) test wells for easy and rapid transfer of the test organisms under a dissecting microscope.
- Total performance time approximately 1h for the acute assays and 2h for the short-chronic tests.
- A floppy disc for easy Toxkit data treatment can be obtained on demand.

Sensitivity

- Very chemical dependent, but highly sensitive to particular chemicals and mixtures.
- Growth inhibition NOEC's determined with the short-chronic ROTOXKIT F are ecologically meaningful thresholds for the impact of toxicants on this important group of biota in aquatic food chains.

Validation

- The acute toxicity test with *Brachionus calyciflorus* is an ASTM Standard since 1991.
- A 48h growth inhibition test with rotifers (with *Brachionus calyciflorus* as test species) is proposed in the 20th Edition (1998) of « Standard Methods for the Examination of Water and Wastewater »; the short-chronic rotifer micro-biotest is also under consideration as a new AFNOR Guideline in France.

A list of selected references is available upon request.

N.B. All the materials included in the ROTOXKITS F are also available separately

ROTOXKIT F is a registered trademark of MicroBioTests Inc., Mariakerke (Gent), Belgium.