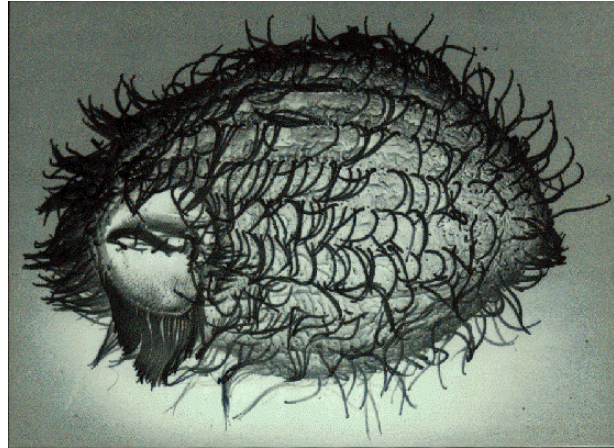


PROTOXKIT F™

MICROBIOTESTS

With the ciliate
protozoan
Tetrahymena
thermophila



**Cost-effective,
culture/maintenance free*
bioassays**

**Live test organisms are included in the kits in “steady state”
condition , for use “on demand” during several months*



Each Toxkit contains
all the materials for
performance of 6
complete bioassays

PROTOXKIT F™

24h Growth Inhibition Microbiotest

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

Each PROTOXKIT F contains all the materials necessary to perform six chronic (multigeneration) toxicity tests with the freshwater protozoan ciliate *Tetrahymena thermophila*.*

* Ciliates are a very important component of benthic microfauna communities and play a key role in the recycling of organic matter. They are also, next to bacteria, the second most important group of biota in activated sludge of wastewater treatment plants.

Easy to follow instructions and detailed illustrations are provided in the kit for the conduct of range-finding and definitive acute tests, with calculation of the 24h EC50. The test organisms are included in the kits in a « steady state » condition in a very specific medium, which allows for their survival for several months at room temperature without prejudice to their good physiological condition.

Test principle and test criterion

- The assay is based on the measurement of the turnover of food substrate into ciliate biomass by optical density (OD) readings.
- Inhibited culture growth under toxic stress is reflected by remaining turbidity of the food suspension (and hence higher OD) in comparison to the control.
- Mean growth inhibition after 24h exposure at 30°C is determined and expressed as 24hEC50. NOEC and LOEC values can be calculated with specific data treatment programmes.

Reproducibility

- Uniform axenic stock cultures of high quality produced in strictly controlled conditions preclude variability associated with maintenance of live stocks in different laboratories.
- The PROTOXKIT F uses standard disposable spectrophotometric cells as test containers, with direct measurement of the OD of the substrate in the cells.
- A Quality Control Test with a reference chemical is described in detail, for accuracy and reproducibility check.

Cost-Effectiveness

- Tests can be started from the stock culture vial, eliminating the need and the costs of continuous culturing and maintenance of test organisms.
- Minimal equipment needed for test performance: colorimeter or spectrophotometer - small incubator - conventional laboratory glassware.
- Shelf-life of stock culture guaranteed for several

months when stored properly, reducing test scheduling constraints.

Contents

- Stock culture vial, sterile syringues for the transfer of the ciliates, tubes with substrate and reconstitution medium, stock dilution and test spectrophotometric cells and cell holders.
- Detailed Standard Operational Procedure brochure, abbreviated Bench Protocol, data scoring sheets and graphical EC50 calculation sheets.
- Specification sheet with batch number of the ciliate stock and the media.

User-Friendliness

- Bioassays can be started anytime immediately from the stock culture.
- Test performance only implies simple photometric OD readings at the start and at the end of the test.
- Total performance time of the assay approximately 1 hour.
- A floppy disc for easy Toxkit data treatment can be obtained on demand.

Sensitivity

- Comparable to that of other ciliates in activated sludges and hence good indicator for toxic hazard in influents of wastewater treatment plants.
- Compares favorably with that of human and animal cell lines pointing to the potential of the PROTOXKIT F as a screening test in human toxicology.

Validation

- Growth inhibition NOEC's determined with PROTOXKIT F tests are ecologically meaningful thresholds for the protection of protozoan microfauna in benthic communities and the well-functioning of the ciliate component in activated sludges.
- Very large data base available on many chemicals for the related species *Tetrahymena pyriformis*.
- Test Guideline for *Tetrahymena* bioassay under priority development in OECD.

A list of selected references is available upon request

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

PROTOXKIT F is a registered trademark of Micro-BioTests Inc., Nazareth, Belgium.