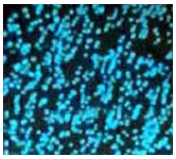
detect and identify

Toxicity of Water Samples

The quality of potable water should be considered as one of the most important elements in human health. But the intensive development of chemical industry and the use of pesticides in agriculture result in heavy contamination of natural water resources. Moreover, water chlorination (used to inhibit bacterial contamination) might lead to the formation of complex mixtures of toxic and genotoxic chlorinated hydrocarbons in drinking water. In the absence of a sensitive and general test for such a diverse group of toxicants, however, most of our water supplies are not analysed on a routine basis, and it is quite common that comprehensive chemical analyses of water is conducted only per several years.



The use of intact luminous photobacteria (*Vibrio fischeri* or *Photobacteria leiognathi)* or dinoflagellates for toxicity assessment has some clear advantages that have been scientifically validated. These protozoas are self-maintained luminescent units that, under proper conditions, emit high and steady levels of luminescence.

Toxicants of different characteristics such as pesticides, herbicides, chlorinated hydrocarbons, heavy metals etc. or agents that affect the cell's integrity and especially membrane function or affect cell respiration, the rate of protein or lipid synthesis have a strong effect on in-vivo luminescence.

By comparing the luminescence level obtained in a suspected toxic sample after a short period of incubation, one can detect very low concentrations of a broad range of toxicants. For this kind of luminescence detection all BERTHOLD luminometers can be used, but the transportable Junior LB 9509 is best suited for outdoor measurement.

Selection of Water toxicity kits:

Luminescence technology:

Kit:
- Tox Screen Water Toxicity Test (CheckLight)
- Biochemical Oxygen Demand (BOD) Test (CheckLight)
- Biocide Activity Test (CheckLight)
- Assimilable Organic Carbon (AOC) Test (CheckLight)
- Lumitox (Lumitox Gulf L.C.)
- BioFix® *Lumi* (Macherey & Nagel)

BERTHOLD instruments:
Junior portable tube luminometer LB 9509
Lumat single tube luminometer LB 9507
Automated tube luminometers LB 955/LB953
Centro microplate luminometer LB 960

With this abstract BERTHOLD TECHNOLOGIES likes to give a short introduction and some information about available kits. BERTHOLD TECHNOLOGIES will not be in no way responsible for the validity of information given on these pages.