



Genotoxicology Testing of Environmental Samples

MOLTOX® UMU Genotoxicity Test Kit

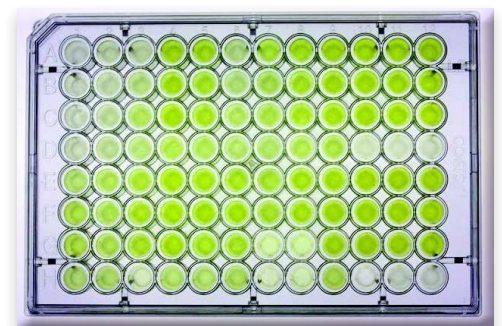
- Test kit for assessing genotoxic activity in water, waste water, pure chemicals and solid samples
- Test kit contains strains & controls & all media and all reagents necessary to analyze aqueous and solid samples
- Includes lyophilized MUTAZYME™, ready to use S9 with all Co-factors (storage -20°C), tests are conducted using activation and non-activation conditions
- 1-day microplate format kit
- Method widely accepted for analysis of environmental samplers - complies with **ISO 13829**



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#31-400 - Kit Components

Item	Description
73-1535pSK	PTM™ Salmonella typhimurium TA1535/pSK1002* (2 vials)
26-714.1	TGA Culture Medium (200 ml; requires addition of 22-147)
26-715	10 x TGA Culture Medium (10 ml; requires addition of 22-147)
22-147	Ampicillin (50 mg)
26-716	B-buffer (35 ml)
27-718	Stop Reagent (30 ml)
22-148L	ONPG (2 x 4.95 mg)
22-149	2-Mercaptoethanol (2 x 100 µl)
60-163	4-Nitroquinoline-N-oxide (12.5 µg)
60-164	2-Aminanthracene (50 µg)
11-401.3L	MUTAZYME™ 30 % S9 Mix (reconstitute with 3,25 ml)
	User instruction included



Yellow wells indicate cleavage by β -galactosidase

MOLTOX® UMU Genotoxicity Test Kit (#31-400) consists of materials to perform the umu genotoxicity assay as described by Reifferscheid, G, et al., "A microplate version of the SOS/umu-test for rapid detection of genotoxins and genotoxic potentials of environmental samples", Mutation Research, 253:215-222, 1991 and codified in ISO 13829.

* according to the German "Gentechnikgesetz" TA1535/pSK1002 has been classified as "genetically modified organism" (GMO/GVO) of risk group 1 / BSL1. Please check for appropriate regulations in your country!



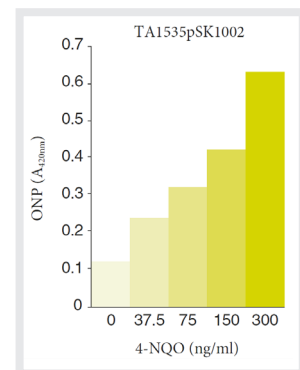
Basis of the Test

The UMU Genotoxicity Test is based on the observation that the umu operon of *E. coli* is induced by agents that damage DNA and that are, therefore, potential carcinogens. The test measures the ability of chemical treatments to induce umu gene expression in *S. typhimurium* TA1535 in which a pSK1002-containing umuC-lacZ fused gene has been introduced (Oda, Y, *et al.*, *Mutat res*, 147:219-229, 1985). Umu gene induction is estimated by analysis of β -galactosidase activity expressed by the fusion gene. The Molttox® UMU Genotoxicity Test is conducted in 96-well microplates as described by G. Reifferscheid *et al.* (*Mutat res*, 253:215-222, 1991). Application of the method for water and waste water samples is described in ISO 13829.

Briefly, an overnight culture of the tester strain is diluted and then grown to a particular cell density. Cells are distributed into 96-well microplates, treated with the material of interest, and incubation continued. After 2 hours, the treated (and control) populations are diluted into a second microplate and incubation continued. ONPG (β -galactosidase substrate) is added to a fraction of the treated cells after transfer to a third microplate containing permeabilizing buffer. Finally, β -galactosidase activity is estimated by measurement of the appearance of ONP using a microplate reader (A_{420}). (Gilbert, RI, *Mutat res*, 74:283-289, 1980).

Advantages of the Test

- Method widely accepted for analysis of environmental samples - complies with ISO 13829
- Quantitative and unambiguous colorimetric endpoint - results are easily submitted to statistical analysis
- Single kit (#31-400) contains all the media and reagents necessary to analyze aqueous as well as solid samples - e.g. water, waste water, pure chemicals, solid environmental samples and etc.
- Tests are conducted using activation and non-activation conditions - kit includes ready to use S9 (MUTAZYME™)



For information send an E-Mail to info@trinova.de

About Us

TRINOVA BIOCHEM GmbH is the European distributor of MOLTOX®, the leading manufacturer of products used in the Salmonella and *E. coli* WP2 mutagenicity tests: Minimal glucose agar plates, top agars, Salmonella and *E. coli* tester strains, frozen and lyophilized S9, MUTAZYME™, NADPH-regenerating systems and positive control chemicals. The BioReliance® Ames II™ test kit produced by MOLTOX® is distributed by TRINOVA in Europe as well.

MOLTOX[®]
Molecular Toxicology, Inc.