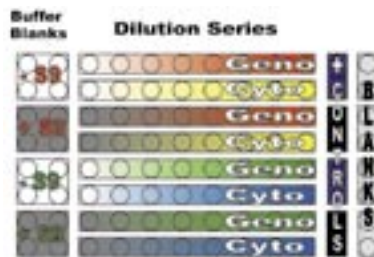


Vitotox[®] System

Vitotox is a high-throughput bioluminescent assay that offers a unique method for rapid and cost effective geno- and cytotoxicity screening.

A turnkey solution for the Cellular Assay Workstation



96-well layout for the Vitotox test

Unique assay principle

The Vitotox assay is a *Salmonella typhimurium* test that uses the light emission of bacteria to detect the genotoxicity, cytotoxicity and mutagenic potency of the sample. It is used for the detection of genetic damage caused by the chemical in pharmaceutical, cosmetic, environmental, etc., research. The assay is based on a reporter gene system where luciferase activity is used as a function of the genotoxicity. Luciferase expression is activated via a cascade of reactions known as the SOS response.

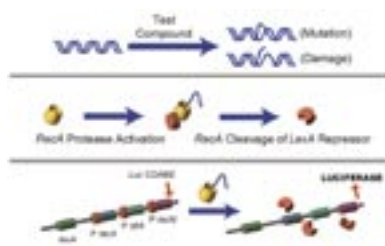
Benefits of the assay

The entire DNA content of the cell functions as a target for the genotoxin to display its effect. Therefore,

only a few micrograms of the sample is normally required for the assay.

A cytotoxicity assay is also performed together with each sample to prevent false positive and negative results.

No cell growth is required for the genotoxicity detection, resulting in very short assay times.



The test uses a simple “mix and measure” procedure: the compounds are pipetted into 96- or 384-well microplates as a dilution series along with blanks, positive control samples, and with or without S9 metabolic extract. The cultured test bacteria are added and the light emission is followed over a three-hour assay period.

Correlation with traditional genotoxicity assays is exceptionally good.

General principle of SOS induction. Derepression of the *RecN* gene is followed by placing a *Lux* reporter system under transcriptional control of the *RecN* promoter.

ATP Assay Products

Thermo's Quantitative ATP Monitoring Kit is used for measuring free ATP concentrations. Using the bioluminescence technique, the monitoring kit measures ATP in bacterial, plant or mammalian cells, as well as tissue samples over a

concentration range of 10^{-11} to 10^{-6} moles per liter. This kit also enables any enzyme or substrate that can be coupled to the production or consumption of ATP to be measured quantitatively. The assay can be freely used with any cells and

cell lysis reagents. It is convenient, rapid and reproducible, with results available in just minutes. Individual assay components are also available for those researchers who only have very few samples.

→ Ordering information on pages 54–55.

