



**Cultrex®**

**ANGIOGENESIS • DNA DAMAGE & REPAIR • APOPTOSIS**

## MTT & XTT Cell Proliferation Assay Kits

### To assay cell proliferation, cell viability, and/or cytotoxicity

The use of tetrazolium salts, including MTT (3,[4,5-dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide) and XTT (2,3-Bis(2-methoxy-4-nitro-5-sulfophenyl)-2H-tetrazolium-5-carboxanilide), to assay cell proliferation, cell viability, and/or cytotoxicity is a widespread, established practice. The procedures of Trevigen's TACS<sup>®</sup> MTT and TACS<sup>®</sup> XTT Cell Proliferation Assays avoid radioactivity, allow for rapid determination in microplates, and give reproducible and sensitive results.

Both assays are used to measure changes in cell proliferation. In actively proliferating cells, an increase in MTT/XTT conversion is spectrophotometrically quantified. Comparison of this value to an untreated control provides a relative increase in cellular proliferative activity. Conversely, in cells that are undergoing apoptosis, MTT/XTT reduction decreases, reflecting the loss of cell viability.

### TACS<sup>®</sup> MTT Cell Proliferation Assay

The TACS<sup>®</sup> MTT Cell Proliferation Assay (MTT-CPA) is a sensitive kit for the measurement of cell proliferation based upon the reduction of the tetrazolium salt 3, [4,5-dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide (MTT). Changes in cell proliferation caused by trophic factors, growth inhibitors, or inducers and inhibitors of apoptosis, may be quantified using the MTT-CPA. MTT is reduced to an insoluble formazan dye by mitochondrial enzymes associated with metabolic activity.

### TACS<sup>®</sup> XTT Cell Proliferation Assay

The reduction of XTT is primarily due to glycolytic activity within the cell and is dependent upon the presence of NADH and NADPH. Cleavage of the tetrazolium salt to formazan occurs via the succinate tetrazolium reductase system in the mitochondria of metabolically active cells. The reaction is attributed mainly to mitochondrial enzymes and electron carriers, but a number of other non-mitochondrial enzymes have been implicated.

XTT, a yellow tetrazolium salt, is cleaved to a soluble orange formazan dye, which can be measured by absorbance at 490 (or 450) nm in a microplate reader. Efficient reduction of XTT requires an electron coupling reagent. This kit includes both XTT and the electron coupling reagent for a convenient and simple assay. The XTT kit offers the advantage that solubilization of the reduced formazan dye is not required as in MTT products.



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### Ordering Information:

Description	Size	Catalog #
MTT Cell Proliferation Assay Kit	5000 Tests	4890-050-K
MTT Cell Proliferation Assay Kit	2500 Tests	4890-025-K
XTT Cell Proliferation Assay Kit	2500 Tests	4891-025-K

### Features and Benefits:

Features	Benefits
Microtiter plate format	Kits allow rapid determination of cell proliferation, viability, and/or cytotoxicity.
Safe	Neither kit requires isotopic reagents and the reaction product is solubilized using a non-organic solvent.
Flexible	Reaction product can be visualized directly by microscopy to evaluate cell to cell reactivity, or solubilized and evaluated by microplate reading.
Convenient	Stabilized formulation is stored in your refrigerator and does not require thawing before use.

### Related Cell Proliferation and Viability Kits:

Description	Size	Catalog #
Calcein AM Cell Viability Assay Kit	1000 Tests	4892-010-K
DePsipher™ Kit	100 Tests	6300-100-K
MitoShift™ Kit	100 Tests	6305-100-K

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