# TECHNICAL MANUAL

# MTS Cell Proliferation Assay

- **SKU CODE:** ARMA00014
- **SIZE:** 2500 Wells
- **DETECTION PRINCIPLE:** Colorimetric
- Research-Use-Only

Revised: 06/2026

# 1. Introduction

Among the various cell proliferation assays, there are distinct advantages to using MTS as the detection reagent. One major plus with MTS is that it is a direct measurement of mitochondrial metabolic activity, thus providing a more accurate assessment of cell viability and growth compared to MTT. MTS provides a quicker, more sensitive and easier-to-use protocol. It also has better linearity than MTT. The formazan product generated from MTS remains soluble, therefore reducing the risk of interference from cell culture components. Assay Genie's MTS Cell Proliferation Assay is a one-step, optimized reagent for quantification of viable cells in proliferation and cytotoxicity assays. The reduction of MTS by viable cells to a colored formazan is believed to be due to mitochondrial dehydrogenases. The formazan is simply quantified by absorbance at 490 nm.

# 2. Applications

- The study of cell proliferation and responses to growth factors, cytokines, mitogens and nutrients.
- The study of cytotoxicity due to toxic compounds such as anticancer drugs and other toxic agents.
- The study of metabolic inhibitors that inhibit cell growth or metabolic activity.

# 3. Kit Component

| Component | Quantity | Colour |
|---|---|---|
| MTS Reagent | 50 ml (2500 wells) | Amber |

# 4. Storage and Handling

Store unopened kit at -20°C. Bring the MTS Reagent to room temperature before use. The MTS Reagent is light sensitive and is best used under subdued light. It can be stored at 4°C for up to 6 weeks when being used regularly. For long-term storage, store the kit at -20°C.

# 5. Assay Protocol

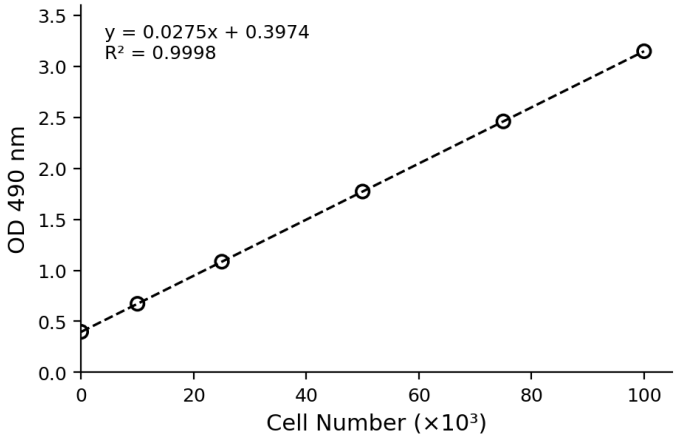
1. Culture cells at the appropriate density for the cell type being used. 5-100 × $10^3$ cells per well in 200 µl of culture medium ± compounds to be tested is an appropriate range for MTS.
2. Incubate cells for 24-48 hours.
3. Add 20 µl of MTS Reagent to each well and incubate for 30 minutes to 4 hours under the same culture conditions as in step 2.
4. Shake the plate briefly. Measure absorbance at 490 nm.

**Notes:**

- If the cells are cultured in a different volume of culture medium (384-well plate), keep the MTS Reagent at 10% of the culture medium.
- Absorbance measurement can be postponed up to 18 hours. To prepare the plate for delayed measurement, add 10 µl of 10% SDS to each well to kill the cells and stop the reaction. Protect SDS-treated plates from light at room temperature until absorbance measurement is made.

# 6. Typical Results

The MTS assay produces a highly linear response across the working range, as shown below.




*Jurkat cells were diluted to the numbers shown per well in serum-free medium. MTS Reagent was added and the cells placed in an incubator at 37°C for one hour. The plate was then read in a plate reader at 490 nm. The response is highly linear between 10–100 × $10^3$ cells per well.*

# 7. Statement

This product is for Research Use Only. Not to be used on humans, or for diagnostic or therapeutic procedures. Please read the instructions carefully and follow them strictly during the experiments. Protective measures should be taken, including wearing a lab coat and gloves.

**Assay Genie 100% money-back guarantee!**

If you are not satisfied with the quality of our products and our technical team cannot resolve your problem, we will give you 100% of your money back.

**Manufacturers Statement: This final kit system is assembled and quality-released by Assay Genie Limited.**