CPT-0104

MTS Cell Proliferation Assay

(Sufficient for 2500 wells, other sizes available, Colorimetric, OD 490 nm Store at -20°C)

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. AkrivisBio'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.

Applications:

The study of cell proliferation and responses to growth factors, cytokines, mitogens, 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.

Assay Components:

MTS Reagent

50 ml (2500 wells)	Amber NM	CPT-0104
5 ml (250 wells)	Amber NM	CPT-0104a
10 ml (500 wells)	Amber NM	CPT-0104b
100 ml (5000 wells)	Amber NM	CPT-0104c
200 ml (10000 wells)	Amber NM	CPT-0104d

Storage and Handling Considerations:

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 used regularly. For long-term storage, store kit at -20°C.

Assay Protocol:

1. Culture cells at the appropriate density for the cell type being used. 5-100 x 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 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 (394 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 reaction. Protect SDS-treated plates from light at room temperature until absorbance measurement is made.

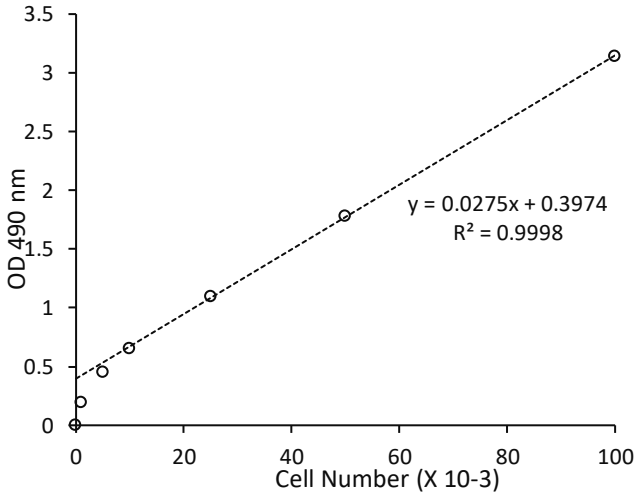

Figure: Jurkat cells were diluted to the numbers shown per well in serum-free medium. MTS Reagent was added, and the cells placed in an incubator at 37°C for an hour. The plate was then read in a plate reader at 490 nm. The response is highly linear between 10 – 100 x 10^3 cells per well.

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