

# MTT Assay Kit (Cell Proliferation) ab211091

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### Overview

Product name	MTT Assay Kit (Cell Proliferation)
Detection method	Colorimetric
Sample type	Adherent cells, Suspension cells
Assay type	Quantitative
Assay time	3h 15m
Species reactivity	<b>Reacts with:</b> Mammals, Other species
Product overview	MTT Assay Kit ab211091 is an easy-to-use, non-radioactive, and high-throughput assay for measuring cell proliferation, cell viability and cytotoxicity.

The MTT assay protocol is based on the conversion of water soluble MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) compound to an insoluble formazan product. NB: MTT is also available as free molecule as [ab146345](#) (Thiazolyl blue tetrazolium bromide).

Viable cells with active metabolism convert MTT into formazan. Dead cells lose this ability and therefore show no signal. Thus color formation serves as a useful and convenient marker of only the viable cells. The measured absorbance at OD 590 nm is proportional to the number of viable cells.

The MTT assay is a measure of the metabolic activity of the cells analyzed; the more metabolic activity in the sample, the higher the signal. This should be considered when interpreting the results of the assay.

MTT assay protocol summary:

- replace serum-containing media with serum-free media and MTT reagent in cell cultures
- incubate for 3 hr at 37°C
- add MTT solvent and incubate for 15 min
- analyze with microplate reader

**Notes** This product is manufactured by BioVision, an Abcam company and was previously called K299 MTT Cell Proliferation Assay Kit (Colorimetric). K299-1000 is the same size as the 1000 test size of ab211091.

Review our [cell health assay guide](#) to learn about our kits to perform a [cell viability assay](#), [cytotoxicity assay](#) or [cell proliferation assay](#). An alternative product, [MTS assay kit](#)

**ab197010**, uses a similar principle to this kit, but without the need for the MTT solvent step.

### How other researchers have used MTT Assay Kit ab211091

This MTT assay kit has been used in publications with a variety of cell types, including: HUVEC cells<sup>1</sup>, U2OS cells and Saos2 cells<sup>2</sup>, human PBMCs<sup>3</sup>, rat primary hepatic stellate cells<sup>4</sup>, DBTRG glioblastoma cells<sup>5</sup>, SKOV3 human ovarian cancer cells<sup>6</sup>, mouse vascular smooth muscle cells<sup>7</sup>, human iPSC-derived neuronal cultures<sup>8</sup>, primary bladder cancer cells<sup>9</sup>

References: 1-De Felice F et al 2019, 2-Zhang X et al 2019, 3-Schotterl S et al 2018, 4-Huang W et al 2015, 5-Tang XJ et al 2016, 6-Zhu Q et al 2017, 7-Ma S et al 2018, 8-Rane A et al 2018, 9-Maj M et al 2018

### Platform

Microplate reader

### Properties

#### Storage instructions

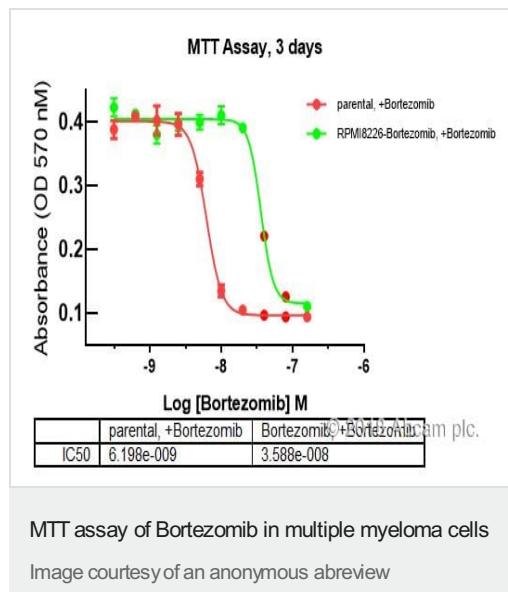
Store at -20°C. Please refer to protocols.

Components	1000 tests
MTT Reagent	1 x 50ml
MTT Solvent	1 x 150ml

### Relevance

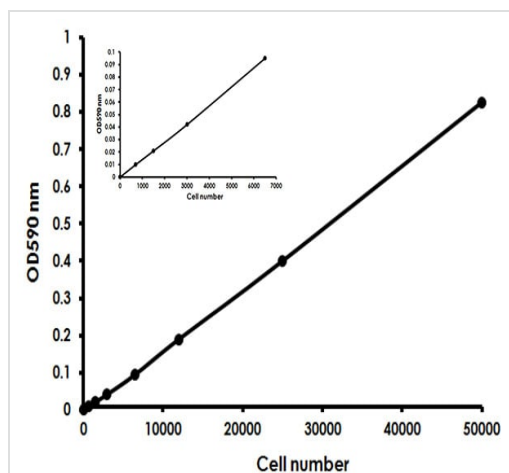
Cell proliferation is the multiplication or reproduction of cells, as a result of cell growth and cell division, resulting in the expansion of a cell population.

### Images



MTT assay kit ab211091 was used by an Abcam customer (see product review) to assess the cell viability of myeloma cells which have acquired resistance to bortezomib (a proteasome inhibitor used as a cancer therapeutic).

Cells previously treated with 10 nM bortezomib for 1.5 months (RPMI8226-Bortezomib) had significantly improved viability, compared to the parental untreated cell line, when treated for 72 hours with varying concentrations of bortezomib.



MTT Cell Proliferation Assay (ab211091)

HeLa cells were grown in DMEM media supplemented with 10% FBS, harvested using trypsin and counted using Trypan blue and a hemocytometer. Cells were then serially diluted in a clear cell culture plate and incubated for 3 hours with MTT Reagent at 37°C. After incubation, cells were treated with MTT Solvent for 15 minutes at room temperature. Absorbance was measured at OD = 590 nm. Inset graph is an expanded segment of the assay data at lower cell number per well.

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