

# Cell Proliferation & Cytotoxicity

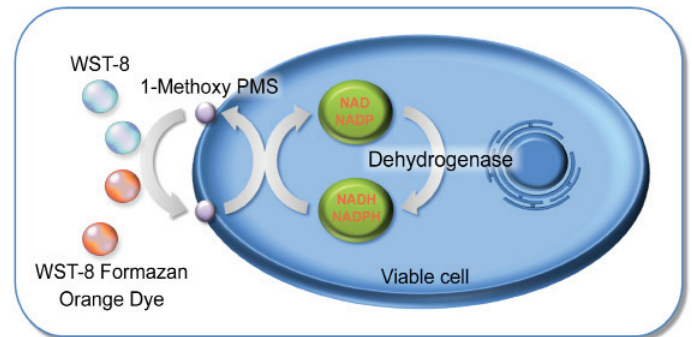


Cell Counting Kit-8 (CCK-8)  
WST Method

~ Comparison with BrdU, <sup>3</sup>H Tymidine Assay ~

## General Information

Cell Counting Kit-8 (CCK-8) allows sensitive colorimetric assays to determine the cell viability in cell proliferation and cytotoxicity assays. Dojindo's highly water-soluble tetrazolium salt, WST-8\*, is reduced by dehydrogenase activities in cells to give a yellow-color formazan dye, which is soluble in the tissue culture media. The amount of the formazan dye, generated by the activities of dehydrogenases in cells, is directly proportional to the number of living cells. The detection sensitivity of CCK-8 is higher than the other tetrazolium salts such as MTT, XTT, MTS or WST-1.



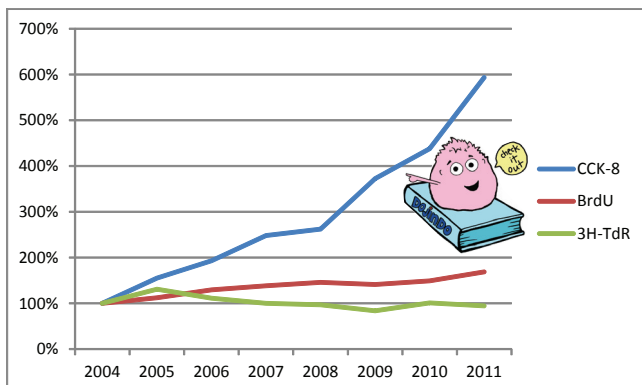
## Most simple procedure!!!

**THE HANDLING** time of Cell Counting Kit-8 is shortest among it's competitors. Only 15 minutes of handling time for Cell Counting Kit-8 is needed where as, 55 minutes or longer is required for both BrdU and <sup>3</sup>H-Thymidine assays. Not only is less handling time required for Dojindo's Cell Counting Kit-8, but CCK-8 allows more accurate test results.

Reagent	Procedure						Handling Time
CCK-8			Add Reagent 10 minutes			Measurement 5 minutes	15 minutes
BrdU	Labeling BrdU 10 minutes	Fix Cells 45 minutes	Add BrdU-POD 10 minutes	Wash Cells 10 minutes	Add Substrate 10 minutes	Measurement 5 minutes	90 minutes
<sup>3</sup> H-TdR	Label <sup>3</sup> H-TdR 10 minutes	Wash Cells 10 minutes	TCA Preparation 20 minutes	Homogenize Cells 20 minutes		Measurement 10 minutes	70 minutes

## Our consumer rate is increasing

According to online journal search engines such as highwire.org and pubmed.com, the number of published journals for Dojindo's "Cell Counting Kit-8" has increased over the past few years. In 2005, Cell Counting Kit-8 beat both BrdU and <sup>3</sup>H-Thymidine cell proliferation methods. In 2009, Cell Counting Kit-8 surpassed both methods by more than 100%.



## References using CCK-8

### Immunotoxin Research

A recombinant immunotoxin engineering for increased stability by adding a disulfide bond has decreased immunogenicity  
Wenhai Liu, et al., Protein Engineering Design and Selection, 25(1), 1 (2012)

### Stem Cell Research

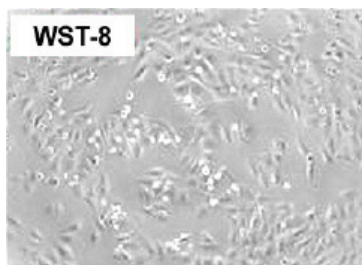
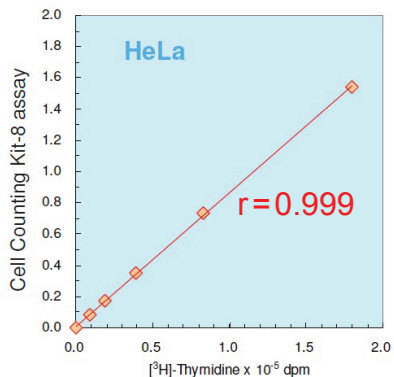
Oligo-guanosine nucleotide induces neuropilin-1 internalization in endothelial cells and inhibits angiogenesis  
Masashi Narazaki, et al., Blood, 116(16), 3099 (2010)

### Signal Transduction Research

7-Ketocholesterol-Induced Inflammation: involvement of Multiple Kinase Signaling Pathways via NFκB but Independently of Reactive Oxygen Species Formation  
Ignacio M. Larrayoz, et al., Invest. Ophthalmol. Vis. Sci., 51(10), 4942 (2010)

# Great Correlation Data

CCK-8 gives us the great correlation result with <sup>3</sup>H-Thymidine Assay.

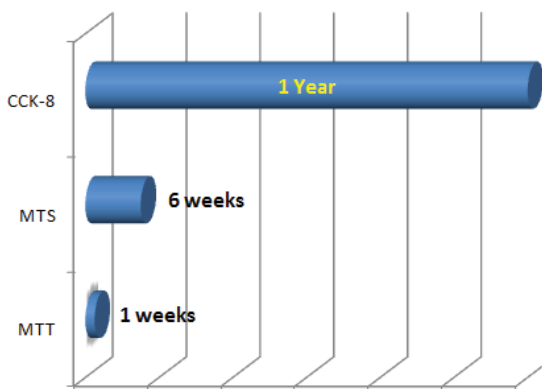


## No Toxic Cells

Only in CCK-8, continuous culture is possible without killing cells. Observation of HeLa cells with WST-8(CCK-8) for 24 hours from addition of CCK-8 reagent.

## Longer stability at 5°C

With stability up to a year at -20°C, you don't have to worry about preparing your cell proliferation reagent right before your experiment. Cell Counting Kit-8 is even stable for 6 months at room temperature. There is no one out there who can survive the heat like us.

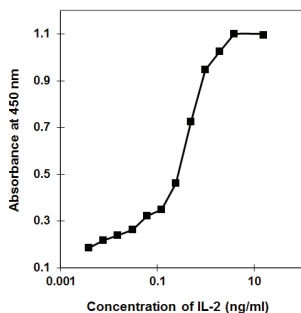


## Assay Data

### Proliferation

#### Response by Cytokine

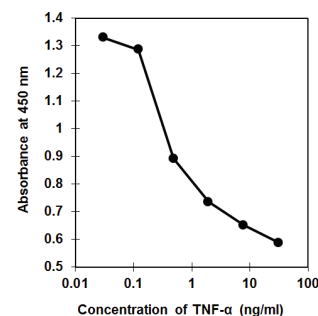
**Cell :** CTLL-2 Cells  
**Medium:** RPMI1640 with FBS  
**Drug :** Human Interleukin-2  
**Exposure :** 37°C, 5% CO<sub>2</sub>, 72 hr



### Cytotoxicity

#### Anti Cancer Drug Activity

**Cell :** HeLa Cells  
**Medium:** DMEM with FBS  
**Drug :** TNF-α with 1 mg/ml Actinomycin D  
**Exposure :** 37°C, 5% CO<sub>2</sub>, 5 hr



Product Code	Product Name	Unit	Price (USD)
CK04-01	Cell Counting Kit-8	100 tests	33.00
CK04-05		500 tests	101.00
CK04-11		1,000 tests	176.00
CK04-13		3,000 tests	371.00

\*One test corresponds to one well on a 96-well plate.  
 500 tests (5 mL) per bottle for 500, 1,000, and 3,000 tests.

### Research Use Only

Prices listed are for U.S. customers only and may vary in other countries.  
 Prices are subject to change without notice.

301.987.2667  
 1.877.987.2667



info@dojindo.com  
 www.dojindo.com

**DOJINDO MOLECULAR TECHNOLOGIES, INC.**  
 30 West Gude Drive, Suite 260  
 Rockville, MD 20850, USA