

# Cell Proliferation & Cytotoxicity

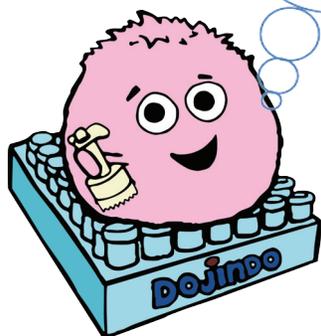


Cell Counting Kit-8 (CCK-8)  
WST Method

## Comparison between WST-8, MTT, MTS & WST-1 Assay

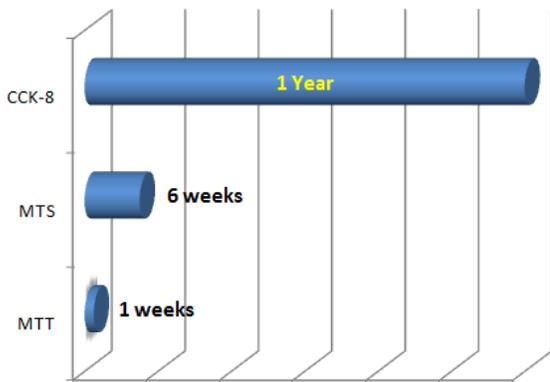
Did you know...

Dojindo is the original developer and manufacturer of the WST dyes?



## Longer stability

With stability up to a year at 5°C, you don't have to worry about preparing your cell proliferation reagents 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. ...



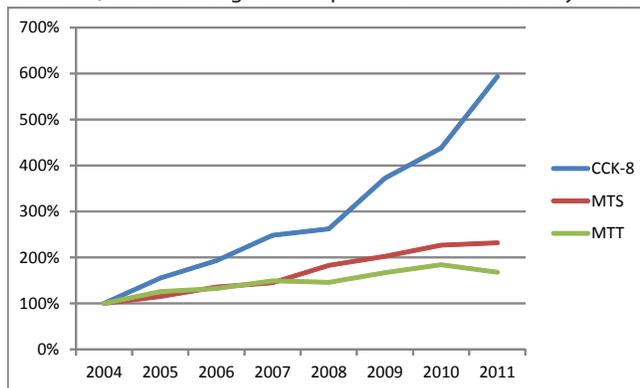
## Most simple procedure!!!

**THE HANDLING** time of Cell Counting Kit-8 is the shortest among its competitors. Only 15 minutes of handling time for Cell Counting Kit-8 where as 20 minutes or longer handling time is required for both MTS and MTT assay. Not only is less handling time is required, but CCK-8 provides more accurate test results. Why? With higher solubility, unlike MTT method, you do not lose cells when solubilizing MTT.

Reagent	Procedure	Handling Time
CCK-8	Add Reagent 10 minutes	Measure Abs. 5 minutes <b>15 minutes</b>
MTS WST-1	Thaw Reagent 5 minutes Add Reagent 10 minutes	Measure Abs. 5 minutes <b>20 minutes</b>
MTT	Prepare Reagent 15 minutes Add Reagent 10 minutes Dissolve MTT 20 minutes	Measure Abs. 5 minutes <b>50 minutes</b>

## Our consumer rates are 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 MTS and MTT 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

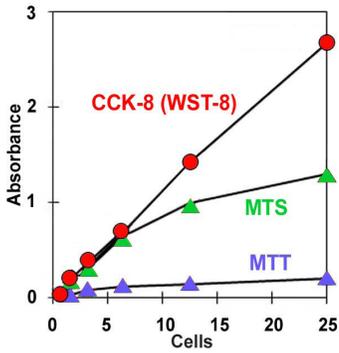
"Oligo-guanosine nucleotide induces neuropilin-1 internalization in endothelial cells and inhibits angiogenesis."

Masashi Narazaki, *et al.*, *Blood*, **116**(16), 3099 (2010)

### Signal Transduction Research

"7-Ketocholesterol-Induced Inflammation: involvement of Multiple Kinase Signaling Pathways via NFkB but Independently of Reactive Oxygen Species Formation."

Ignacio M. Larrayoz, *et al.*, *Invest. Ophthalmol. Vis. Sci.*, **51**(10), 4942 (2010)

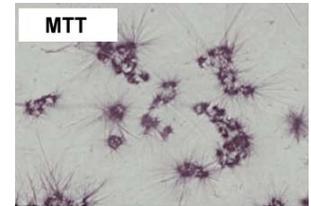
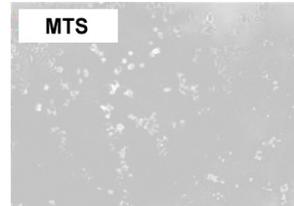
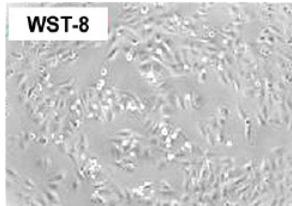


## Highest Sensitivity

Medium : MEM, 10% FCS, L-glutamate (HeLa)  
 RPMI 1640, 10% FCS, L-glutamate (HL60)  
 Incubation : 37°C, 5% CO<sub>2</sub>, 2 hours (HeLa)  
 37°C, 5% CO<sub>2</sub>, 2 hours (HL60)  
 Detection : CCK-8 -450 nm, XTT-450 nm  
 MTS -490 nm, MTT-570 nm

## No Toxicity to Cells

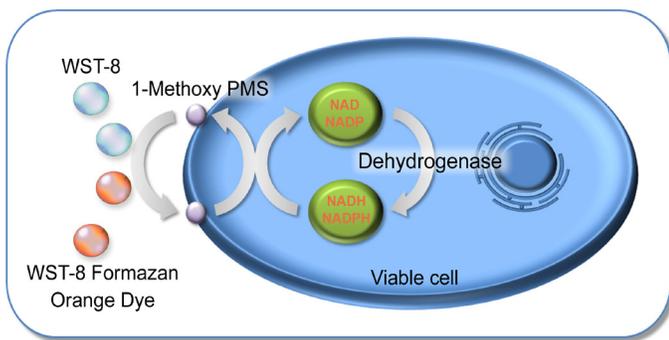
As seen in the photos, even after 24 hours of incubation with CCK-8, cells continue to proliferate. Other cell viability assay kits are toxic to cells, and most of the cells are killed during the first 3 hours of incubation.



## General Information

Cell Counting Kit-8 (CCK-8) allows sensitive colorimetric assays for the determination of 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.

\*Patent No. US6,063,587 & CA2,251,850

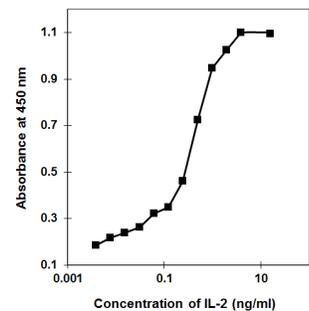


## Assay Data

### Proliferation

#### Response by Cytokine

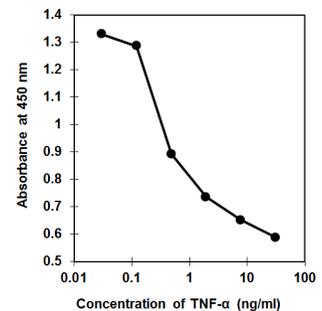
Cell : CTLL-2 Cells  
 Medium: RPMI1640 with FBS  
 Drug : Human Interleukin-2  
 Exposure : 37°C, 5% CO<sub>2</sub>, 72 hr



### 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)
CK04-11	Cell Counting Kit-8	1,000 tests	170.00
CK04-13		3,000 tests	360.00
CK04-20		10,000 tests	950.00

\*One test corresponds to one well on a 96-well plate. 500 tests (5 mL) per bottle for 1,000 and 3,000 tests. 10,000 tests (100 mL) per bottle for CK04-20.

### Research Use Only

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

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