WST-1 Cell Viability & Proliferation Assay

Cat. No. 8038
1000 Tests in 96-well plate

Introduction

The reduction of tetrazolim salts to colored formazan compounds by succinate-tetrazolim reductase, which exists in viable cells, provides a sensitive and accurate method to measure cell viability and proliferation. The most commonly used tetrazolim salt, MTT [3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide], however, suffers from the disadvantage that the formazan dye produced from MTT is extremely water insoluble, so an additional extraction step is needed for spectrophotometric quantification. Instead of MTT, the ScienCell™ WST-1 Cell Viability & Proliferation Assay utilizes a tetrazolim salt WST-1[2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-(2,4-disulfophenyl)-2H-tetrazolium]. WST-1 produces a highly water soluble formazan upon metabolically active cells, allowing a direct and user-friendly colorimetric measurement of cell viability and proliferation.

Kit Components

Cat. No.	# of vials	Reagent	Quantity	Storage
8038a	5	WST-1 powder	6.52 mg	-20°C
8038b	5	Electro Coupling Reagent	2 ml	-20°C

Quality Control

Human Astrocytes (Cat. No. 1800, ScienCell™) serial diluted are plated in 96-well plate. The WST-1 Cell Viability & Proliferation Assay is applied and a linear relationship can be observed between signal produced (OD_{450nm}- OD_{630nm}) and the number of cells (Figure 1).

Procedures (96-well plate)

1. Plate and culture cells in a clear-bottom 96-well tissue culture plate. Incubate cells with test compounds and controls for the desired period of time. The final volume of culture medium in each well should be 100 µl.
2. Thaw Electro Coupling Reagent, and reconstitute each vial of WST-1 with 2 ml of Electro Coupling Reagent. Vortex briefly and keep in the dark at 4°C until use. Freshly reconstituted WST-1 is recommended for each experiment. For longer storage, we suggest that you aliquot and store the reconstituted WST-1 reagent at -20°C, avoid repeated freeze/thaw cycles.
3. Add 10 µl of reconstituted WST-1 reagent to each well of 96-well plate (the volume of the WST-1 reagent should be 1/10 of the original culture medium). Mix well by gently rocking the plate side-to-side.
4. Incubate cultures with WST-1 at 37°C for 2-4 hours depending on cell type and seeding density.
5. After incubation, measure the absorbance on an ELISA plate reader with a test wavelength at 450 nm and a reference wavelength at 630 nm, and subtract the 630 nm background absorbance from the 450 nm measurement.

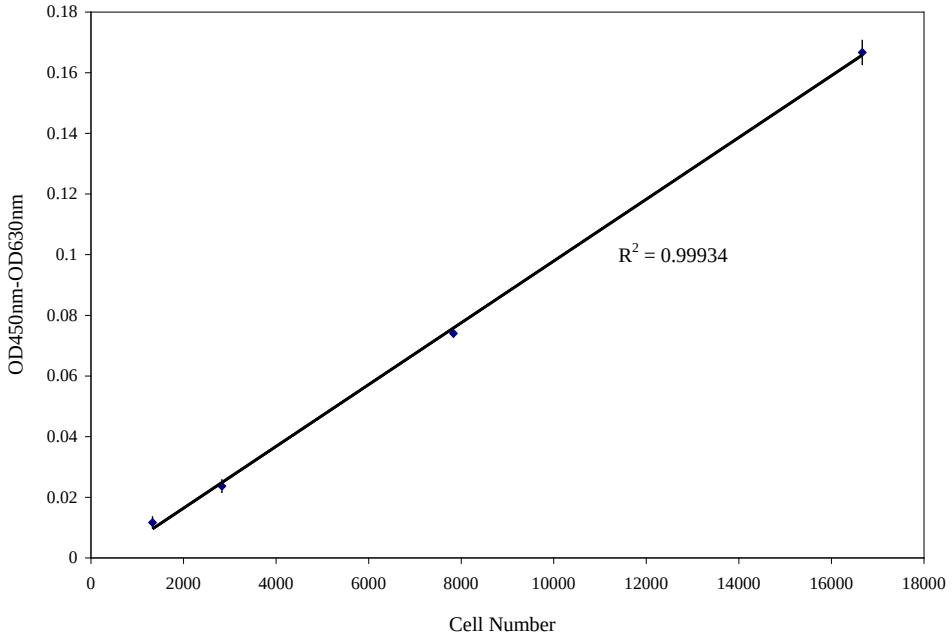

Figure 1. A linear relationship can be observed between OD_{450nm}-OD_{630nm} and the number of HAs.