Product Manual

CytoSelect™ Cell Proliferation Assay Reagent (Fluorometric)

Catalog Number
CBA-250 10 mL (960 assays in 96-well plate format)

FOR RESEARCH USE ONLY
Not for use in diagnostic procedures
**Introduction**

The measurement and monitoring of cell proliferation is an essential technique in any laboratory focused on cell-based research. This skill allows for the optimization of cell culture conditions as well as the determination of cytokine, growth factor, or hormone activity. More importantly, the cytostatic nature of anticancer compounds in toxicology testing, the efficacy of therapeutic chemicals in drug screening, and cell-mediated cytotoxicity can all be assessed through the quantification and monitoring of cell proliferation.

Cell proliferation characteristics include cellular metabolic activity and cell membrane integrity. One method for measuring metabolic activity is to incubate the cells with a tetrazolium salt such as MTT, which is cleaved into a colored formazan product by metabolically active cells. Similarly, the green fluorescent dye Calcein AM can measure intracellular esterase activity in proliferating live cells, which is another indicator of cell viability.

**Assay Principle**

Cell Biolabs’ CytoSelect™ Cell Proliferation Assay Reagent (Fluorometric) provides a fluorometric format for measuring and monitoring cell proliferation. The kit contains sufficient reagents for the evaluation of 960 assays in ten 96-well plates or 192 assays in eight 24-well plates. Cells can be plated and then treated with compounds or agents that affect proliferation. Cells are then incubated with the proliferation reagent. Upon entering metabolically active live cells, the non-fluorescent proliferation reagent is converted into a bright red fluorescent form. An increase in cell proliferation is accompanied by increased fluorescent signal, while a decrease in cell proliferation (and signal) can indicate the toxic effects of compounds or suboptimal culture conditions. The assay principles are basic and can be applied to most eukaryotic cell lines, including adherent and non-adherent cells and certain tissues. This cell proliferation reagent can be used to detect proliferation in bacteria, yeast, fungi, protozoa as well as cultured mammalian and piscine cells.

**Related Products**

1. CBA-080: CytoSelect™ 24-Well Anoikis Assay
2. CBA-081: CytoSelect™ 96-Well Anoikis Assay
3. CBA-230: Cellular Senescence Assay Kit (SA-β-gal Staining)
4. CBA-231: 96-Well Cellular Senescence Assay (SA β-Gal Activity)
6. CBA-240: Cell Viability and Cytotoxicity Assay
7. CBA-253: CytoSelect™ Cell Proliferation Assay Reagent (Colorimetric)

**Materials Not Supplied**

1. Cells for measuring proliferation
2. Cell culture medium
3. 24-well or 96-well clear or black-walled fluorescence microtiter cell culture plates.
4. Fluorescence plate reader capable measuring fluorescence at 560 nm excitation wavelength and 590 nm emission wavelength.

**Storage**
Store at 4°C and protect from light for up to 1 year from date of receipt.

**Assay Protocol**
1. Prepare a cell suspension containing 0.1-1.0 x 10^6 cells/ml in medium.
2. Add 100 µL of cell suspension per well to a 96-well cell culture plate or 500 µL per well to a 24-well cell culture plate with or without the compound to be tested. Culture the cells for 24-96 hours at 37°C and 5% CO₂ in a humidified incubator.
3. Add one tenth volume of the CytoSelect™ Cell Proliferation Assay Reagent per well (for example add 10 µL of CytoSelect™ Cell Proliferation Assay Reagent per 100 µL of cell culture).
4. Incubate plate at 37°C and 5% CO₂ for 4-8 hours.
5. Read the fluorescence with a fluorescence plate reader at 560 nm excitation wavelength and 590-600 nm emission wavelength.

**Example of Results**
The following figure demonstrates typical results with the CytoSelect™ Cell Proliferation Assay (Fluorometric). Fluorescence measurement was performed on SpectraMax Gemini XS Fluorometer (Molecular Devices) with a 560/590 nm filter set and 590 nm cutoff. One should use the data below for reference only. This data should not be used to interpret actual results.
Figure 1. Human HEK 293 Cell Density. HEK 293 cells were seeded at various densities in triplicate as indicated above and allowed to culture for 24 hours. Cells were then treated with the CytoSelect™ Cell Proliferation Assay Reagent for 6 hours at 37ºC and 5% CO2.

References

Recent Product Citations
Warranty
These products are warranted to perform as described in their labeling and in Cell Biolabs literature when used in accordance with their instructions. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THIS EXPRESSED WARRANTY AND CELL BIOLABS DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR PARTICULAR PURPOSE. CELL BIOLABS’ sole obligation and purchaser’s exclusive remedy for breach of this warranty shall be, at the option of CELL BIOLABS, to repair or replace the products. In no event shall CELL BIOLABS be liable for any proximate, incidental or consequential damages in connection with the products.

Contact Information
Cell Biolabs, Inc.
7758 Arjons Drive
San Diego, CA 92126
Worldwide: +1 858-271-6500
USA Toll-Free: 1-888-CBL-0505
E-mail: tech@cellbiolabs.com
www.cellbiolabs.com

©2013-2021: Cell Biolabs, Inc. - All rights reserved. No part of these works may be reproduced in any form without permissions in writing.