

BioTracker™ 529 Green Pluripotent Stem Cell Dye

Live Cell Dye

Cat. # SCT029

pack size: 5x10µg

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Store at -20°C



Data Sheet

page 1 of 2

Background

Pluripotent stem cells, including embryonic stem cells (ES cells) and induced pluripotent stem cells (iPSCs), have the capacity to give rise to differentiated progeny representative of all three germ layers (ectoderm, endoderm, and mesoderm). Characterization of human iPS cells includes alkaline phosphatase and antibody staining for Oct-4, Sox-2, Nanog, SSEA and TRA surface markers. These assays require cell fixation and are end-point assays.

The BioTracker™ 529 Green Pluripotent Stem Cell Dye is a live stem cell probe that selectively identifies undifferentiated human ES and iPS cells. The probe localizes at mitochondria in the human stem cells. The dye's fluorescence is dependent on the activities of ABCB1 and ABCG2 on the cell membrane. The dye is suitable for both live cell imaging and flow cytometry applications of human pluripotent stem cells.

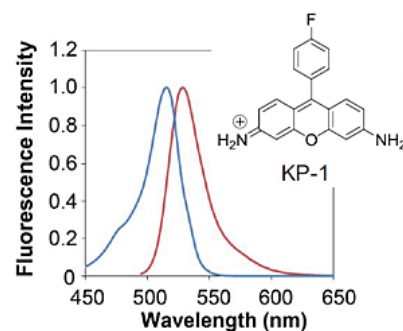


Figure 2. Fluorescent spectra of BioTracker 529 Green Pluripotent Stem Cell Dye.

Storage

Store BioTracker 529 Green Pluripotent Stem Cell Dye at -20°C, desiccate and protect from light

Note: Centrifuge vial briefly to collect contents at bottom of vial before opening.

Spectral Properties

Absorbance: 515nm

Emission: 529nm

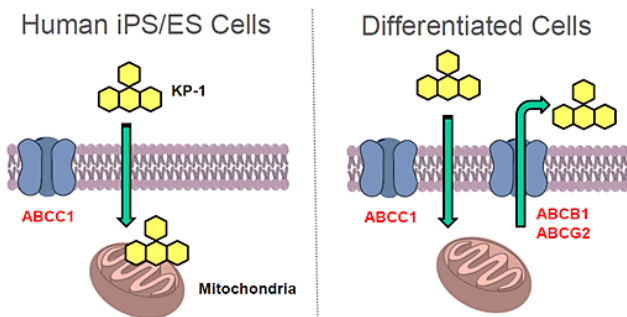


Figure 1. BioTracker 529 Green Pluripotent Stem Cell Dye mechanism

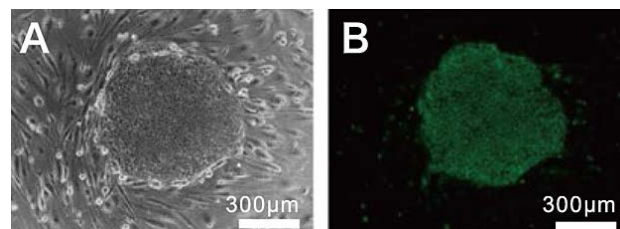


Figure 3. Fluorescent microscopy of human iPS cells and MEF feeder cells using the BioTracker 529 Green Pluripotent Stem Cell Dye. Staining patterns indicates selective staining of undifferentiated stem cell colonies.

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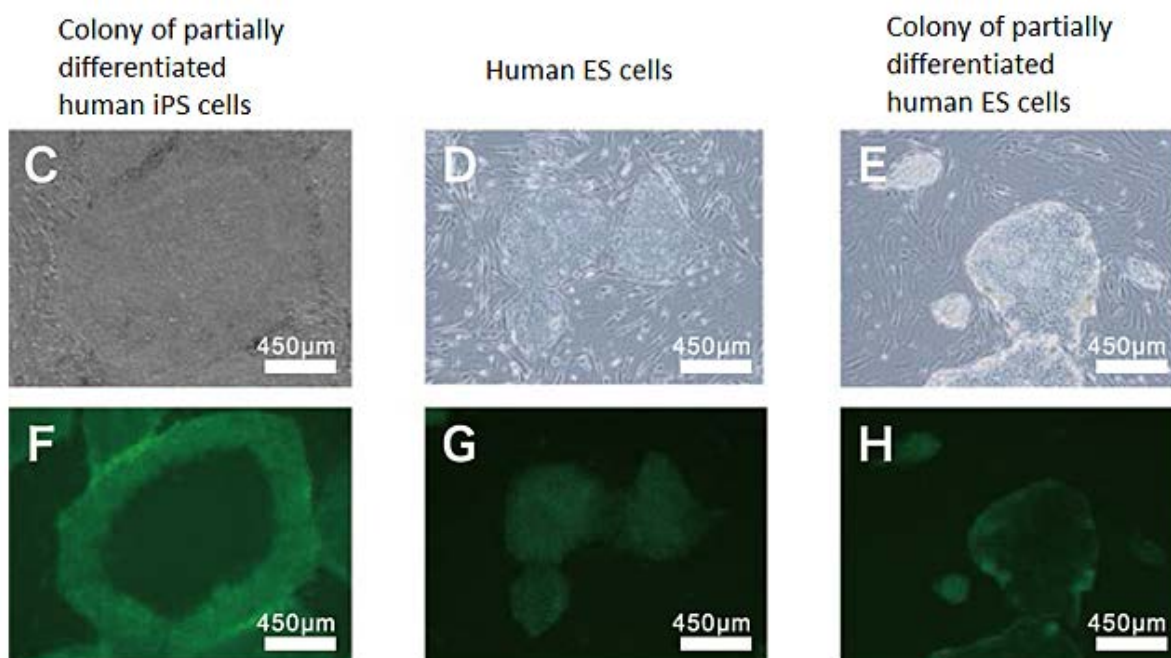


Figure 4. Staining of partially differentiated human ES/iPS cell colonies with the BioTracker 529 Green Pluripotent Stem Cell Dye.

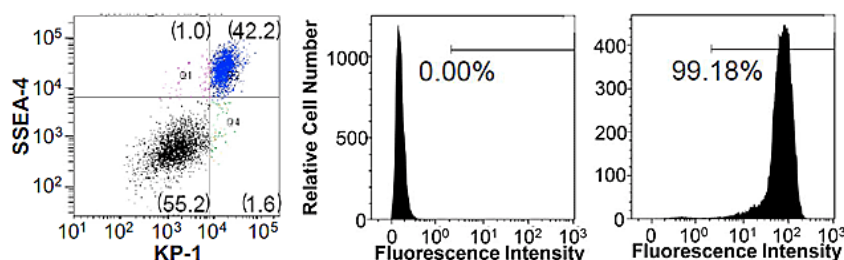


Figure 5. FACS analysis of human iPS cells. When a mixture of human iPS cells and feeder cells were analyzed, most SSEA-4 positive cells were also positive to BioTracker 529 Green Stem Cell Dye (Right panel). 99.18% of SSEA-4 positive human iPS cells were stained by BioTracker™ 529 Green Pluripotent Stem Cell Dye.

Protocol

Reagent Preparation

1. Before opening the vial, spin down the solid to the bottom by a microcentrifuge or by a desktop centrifuge.
2. Dissolve 10 µg of dye (1 vial) in 4.8 µL of DMSO to prepare 5 mM stock solution.
3. Dilute the DMSO stock solution with iPSC culture medium to 2 µM cell stain solution.
4. Add stain solution to the dish and incubate for 3 hours.
5. Replace the buffer to the iPSC culture medium or HBSS and observe the cells using a fluorescence microscope.

BioTracker™ is a trademark of Merck KGaA

antibodies Multiplex products biotools cell culture enzymes kits proteins/peptides siRNA/cDNA products

Please visit www.millipore.com for additional product information, test data and references

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