NeuroFluor™ NeuO

Membrane-permeable fluorescent probe for the detection of live neurons

Catalog #01801 0.1 mL

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Product Description

NeuroFluor™ NeuO is a membrane-permeable fluorescent probe that selectively labels primary and pluripotent stem cell-derived neurons in live cultures. Cells labeled with NeuroFluor™ NeuO can be visualized using fluorescent imaging. Labeling with this probe is non-permanent; it can be washed off, providing unlabeled, viable cells for downstream applications. For additional information, see References.

Molecular Weight: 555.40 g/mol
Ex/Em: 468/557 nm

- Enables selective labeling of mouse, rat, or human neurons without fixation
- Can be used to confirm neuronal differentiation of human pluripotent stem cell-derived neural progenitor cells
- Can be used to label neurons in live culture
- Non-toxic and non-permanent
- Simple and rapid labeling protocol

Properties

Storage: Store at -20°C.

Shelf Life: Stable until expiry date (EXP) on label. Protect product from prolonged exposure to light.

Contains:
- 100 µM NeuO (CAS Number: 1616355-50-0, 1668597-38-3)
- DMSO

Please refer to the Safety Data Sheet (SDS) for hazard information. This product contains components dissolved in dimethyl sulfoxide (DMSO). DMSO is a strong solvent and skin penetrant, and can transport many substances through the skin. DMSO can also penetrate some protective glove materials including latex and silicone. Extra caution should be utilized when handling this product.

Handling/Directions for Use

Thaw NeuroFluor™ NeuO at room temperature (15 - 25°C).

NOTE: If not used immediately, aliquot and store at -20°C.

NeuroFluor™ NeuO may be used to label neurons differentiated from human pluripotent stem cell (hPSC)-derived neural progenitor cells. NeuroFluor™ NeuO may also be used to label neurons derived from primary tissues (human, mouse, or rat). NeuroFluor™ NeuO labeling will be lost upon cell membrane permeabilization and is not recommended for use with fixed cells.

For instructions on how to generate neurons from hPSC-derived neural progenitor cells, refer to the Product Information Sheet (PIS) for BrainPhys™ Neuronal Medium (Document #10000000225) or STEMdiff™ Forebrain Neuron Differentiation Kit (Document #10000005464), available at www.stemcell.com, or contact us to request a copy.

A. PREPARATION OF LABELING MEDIUM

NOTE: Protect labeling medium from light.

The suggested working concentration of NeuroFluor™ NeuO is 0.125 - 0.25 µM. It is recommended to titrate the concentration for each application. Dilute NeuroFluor™ NeuO (100 µM) in the appropriate warm (37°C) medium:

- For primary tissue-derived neurons, use BrainPhys™ Neuronal Medium + NeuroCult™ SM1 Neuronal Supplement (Kit Catalog #05792).
- For hPSC-derived neurons, use STEMdiff™ Neuron Forebrain Maturation Kit (Catalog #08605) or BrainPhys™ hPSC Neuron Kit (Catalog #05795).

OPTIONAL: Labeling of cell nuclei
- Add 2 µg/mL DAPI (Hydrochloride; Catalog #75004) to the labeling medium

B. LABELING PROCEDURE

The following are instructions for labeling hPSC- or primary tissue-derived neurons in one well of a 24-well plate. If using other cultureware, adjust volumes accordingly.

1. Aspirate culture medium and add 1 mL of labeling medium (see section A).
2. Incubate at 37°C for 1 hour.
3. Remove labeling medium.
4. Add 1 mL of fresh culture medium without NeuroFluor™ NeuO.
5. Incubate at 37°C for 2 hours.
6. Visualize NeuroFluor™ NeuO labeling using a fluorescent microscope with appropriate filter sets (NeuO Ex/Em: 468/557 nm).

   NOTE: Cells should be visualized on the same day the labeling procedure is completed, as the NeuroFluor™ NeuO signal may diminish over time.

Related Products

For related products, including specialized cell culture and storage media, supplements, antibodies, cytokines, and small molecules, visit www.stemcell.com/hPSCNCworkflow, or contact us at techsupport@stemcell.com.

References

Miller CL & Lai B. (2005) Human and mouse hematopoietic colony-forming cell assays. In: Helgason CD & Miller CL (Eds.). Basic Cell Culture Protocols (pp. 71–89). Totowa, New Jersey: Humana Press Inc.