Data Sheet

BioTracker™ NIR694 Nuclear Dye (Water)

Live Cell Dye

SCT117

Pack Size: 250 µL

Store at 2-8 °C

FOR RESEARCH USE ONLY

Not for use in diagnostic procedures. Not for Human or Animal Consumption.

Background

The nucleus is a membrane-enclosed organelle found in eukaryotic cells. Cell nuclei contain most of the cell's genetic material, organized as multiple long linear DNA molecules in complex with a large variety of proteins, such as histones, to form chromosomes. Traditionally, DNA stains such as DAPI and Hoechst have been used for microscopy but require fixation and cannot be used for live cell imaging.

The BioTracker™ NIR694 Nuclear Dye (Water) is a far-red nuclear stain for live cells. The dye can be excited by wavelengths from 488 to 647nm and emits far red fluorescence with emission maximum at 694nm. The dye specifically stains the nucleus of live cells. Staining does not require a wash step and demonstrates greater photostability than the traditional blue fluorescent nuclear stains like DAPI and Hoechst. It also can be used to stain live cells for cell cycle distribution analysis by flow cytometry BioTracker™ NIR694 Nuclear Dye (Water) staining is not fixable. For fixed cells we recommend the BioTracker™ NIR694 Nuclear Dye (DMSO).

Storage

Store BioTracker™ NIR694 Nuclear Dye (Water) at 2-8 °C. Protect from Light.

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

Spectral Properties

Absorbance: 662 nm

Emission: 694 nm

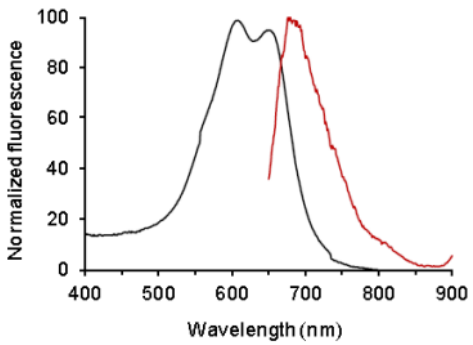

Figure 1. Absorption and emission spectra of BioTracker™ NIR694 Nuclear Dye (Water).

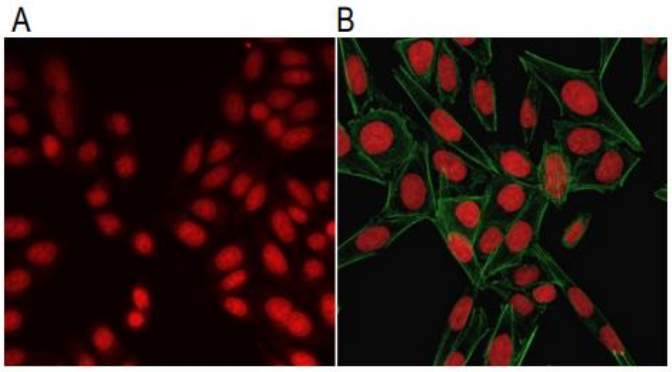

Figure 2. A. Live cell staining of Hela cells using the BioTracker™ NIR694 Nuclear Dye (Water). **B.** Fixed cell staining of Hela cells using the BioTracker™ NIR694 Nuclear Dye (DMSO).

Protocol

BioTracker™ NIR694 Nuclear Dye (Water) is supplied at 200X in water.

Live Cell Staining Protocol

Because BioTracker™ NIR694 Nuclear Dyes do not require a wash step, they can be added after other cell labeling or treatment and immediately prior to fluorescence analysis.

1. Dilute BioTracker™ NIR694 Nuclear Dye in cell culture medium or PBS to a final concentration of 1X.
2. Incubate cells with medium or PBS containing dye for 5-30 minutes at room temperature or for 5 minutes at 37 °C.
3. Detect far red nuclear staining by fluorescence microscopy, flow cytometry, or fluorescence microplate reader.

Note: Like many membrane permeable nucleic acid binding dyes, BioTracker™ NIR694 Nuclear Dyes demonstrate cellular toxicity within 4-18 hours after staining (toxicity may vary by cell type).

Note: For flow cytometry analysis of cell cycle distribution, use a slow flow rate and linear scaling for fluorescence acquisition.

Academic Use Agreement

Subject to local law

THIS PRODUCT MAY ONLY BE USED BY INDIVIDUALS EMPLOYED BY AN ACADEMIC INSTITUTION AND IS INTENDED SOLELY TO BE USED FOR ACADEMIC RESEARCH, WHICH IS FURTHER DEFINED BELOW. BY OPENING THIS PRODUCT, YOU ("PURCHASER") HEREBY REPRESENT THAT YOU HAVE THE RIGHT AND AUTHORITY TO LEGALLY BIND YOURSELF AND/OR YOUR EMPLOYER INSTITUTION, AS APPLICABLE, AND CONSENT TO BE LEGALLY BOUND BY THE TERMS OF THIS ACADEMIC USE AGREEMENT. IF YOU DO NOT AGREE TO COMPLY WITH THESE TERMS, YOU MAY NOT OPEN OR USE THE PRODUCT AND YOU MUST CALL MILLIPORESIGMA ("SELLER") CUSTOMER SERVICE (1-800-645-5476) TO ARRANGE TO RETURN THE PRODUCT FOR A REFUND.

"Product" means BioTracker™ NIR694 Nuclear Dye (Water) (SCT117).

"Academic Research" means any internal in vitro research use by individuals employed by an academic institution. Academic Research specifically excludes the following uses of whatever kind or nature:

- Re-engineering or copying the Product
- Making derivatives, modifications, or functional equivalents of the Product
- Obtaining patents or other intellectual property rights claiming use of the Product
- Using the Product in the development, testing, or manufacture of a Commercial Product
- Using the Product as a component of a Commercial Product
- Reselling or licensing the Product
- Using the Product in clinical or therapeutic applications including producing materials for clinical trials
- Administering the Product to humans
- Using the Product in collaboration with a commercial or non-academic entity

"Commercial Product" means any product intended for: (i) current or future sale; (ii) use in a fee-for-service; or (iii) any diagnostic, clinical, or therapeutic use.

Access to the Product is limited solely to those officers, employees, and students of PURCHASER's academic institution who need access to the Product to perform Academic Research. PURCHASER shall comply with all applicable laws in its use and handling of the Product and shall keep it under reasonably safe and secure conditions to prevent unauthorized use or access.

These use restrictions will remain in effect for as long as PURCHASER possesses the Product.

COMMERCIAL OR NON-ACADEMIC ENTITIES INTERESTED IN PURCHASING OR USING THE PRODUCT MUST CONTACT licensing@emdmillipore.com AND AGREE TO SEPARATE TERMS OF USE PRIOR TO USE OR PURCHASE.

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at SigmaAldrich.com/techservice.

Terms and Conditions of Sale

Warranty, use restrictions, and other conditions of sale may be found at SigmaAldrich.com/terms.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.

Document Template 20306518 Ver 6.0
20353651 Ver 2.0, Rev 11Aug2025, UD