

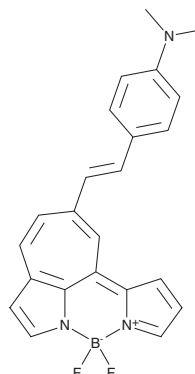
PRODUCT INFORMATION



Neurofibrillary Tangle BODIPY (600/710 nm)

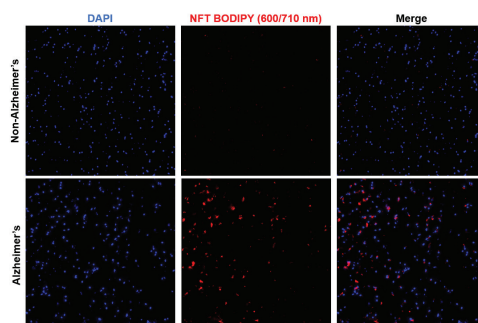
Item No. 40243

CAS Registry No.: 2301931-35-9
Formal Name: (T-4)-[4-[(1E)-2-[1,8-dihydro-8-(2H-pyrrol-2-ylidene-κN)cyclohepta[b]pyrrol-6-yl-κN]ethenyl]-N,N-dimethylbenzenamino]difluoro-boron
Synonyms: NFT BODIPY (600/710 nm), TNIR7-1A
MF: $C_{23}H_{20}BF_2N_3$
FW: 387.2
Purity: $\geq 95\%$
Ex./Em. Max: 570-600/710-744 nm
Supplied as: A 1 mg/ml solution in methyl acetate
Storage: -20°C
Stability: ≥ 2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Detection of neurofibrillary tangles (NFT) in human brain cryosections. Human brain cryosections were labeled with Cayman's NFT BODIPY (600/710 nm; red). Nuclei were counterstained using DAPI (hydrochloride) (Item No. 14285; blue) prior to imaging. The brain of individuals without Alzheimer's disease contains few NFTs and, as expected, minimal labeling was observed in these sections. A higher amount of labeling was observed in brain sections from patients with Alzheimer's disease, which is indicative of aggregated proteins.

Procedures

1. Neurofibrillary Tangle (NFT) BODIPY (600/710 nm) is provided at a concentration of 1 $\mu\text{g}/\mu\text{l}$ (2.58 mM). Dilute to 10 μM with PBS (1X).
2. Collect tissue sections and mount on gelatin-coated or positively charged microscope slides and store at -80°C until use.
3. Allow tissue sections to thaw at room temperature for 5 minutes. Rehydrate tissue sections in PBS (1X). Fix the tissue in 4% paraformaldehyde (PFA) for 10 minutes then wash with PBS (1X) 3X for 5 minutes each. **Optional:** If performing immunostaining, block and incubate the sections with the primary antibody as per the experimental protocol. Decant the primary antibody and label with the secondary antibody as per the experimental protocol.
4. Dilute the 10 μM NFT BODIPY (600/710 nm) solution 1:1,000 in PBS (1X) and add it to the sections. Incubate protected from light at room temperature for 10 minutes, then wash 3X with PBS (1X) for 5 minutes each. If labeling nuclei, use DAPI HCl or a similar counterstain as per the experimental protocol, wash with PBS, and mount a coverslip over the tissue sections. Allow the mounting media to dry prior to imaging.
5. NFT BODIPY (600/710 nm) can be detected using a far-red or near-infrared (NIR) excitation laser.

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Laboratory Procedures

NFT BODIPY (600/710 nm) is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. NFT BODIPY (600/710 nm) is soluble in chloroform and methanol.

Description

NFT BODIPY (600/710 nm) is a fluorescent probe for neurofibrillary tangles (NFTs).¹ It binds to tau-K18 aggregates in a cell-free assay ($K_d = 16.8$ nM) and is 2.17-fold selective for tau-K18 aggregates over amyloid- β (1-42) (A β 42) aggregates. NFT BODIPY (600/710 nm) has been used to label NFTs in postmortem hippocampus from patients with Alzheimer's disease. It has been used to identify tauopathy *in vivo* and *ex vivo* in transgenic human tau^{P301L}-expressing mice with a lower signal occurring in the brain of wild-type mice. NFT BODIPY (600/710 nm) displays excitation maxima ranging from 570 to 600 nm and emission maxima ranging from 710 to 774 nm in the solvents methylene chloride, THF, methanol, DMSO, and PBS.

Reference

1. Xie, T., Li, Y., Tian, C., *et al.* Fused cycloheptatriene-BODIPY is a high-performance near-infrared probe to image tau tangles. *J. Med. Chem.* **65**(21), 14527-14538 (2022).



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