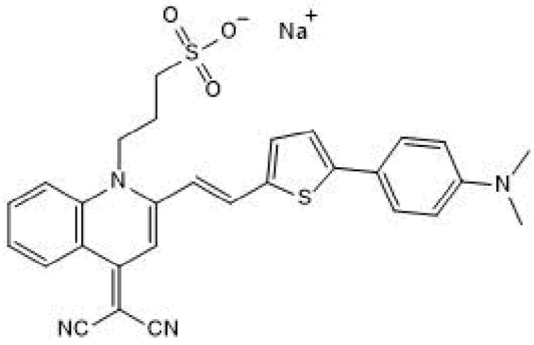
Certificate of Analysis

Product Name: **QM-FN-SO3** **Catalog No.: 7958** **Batch No.: 1**

CAS Number: 2316820-94-5

IUPAC Name: Sodium 3-(4-(Dicyanomethylene)-2-(2-(5-(4-(dimethylamino)phenyl)thiophen-2-yl)vinyl)quinolin-1(4*H*)-yl)propane-1-sulfonate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Weight:	564.65
Physical Appearance:	Dark brown solid
Solubility:	DMSO to 50 mM water to 20 mM
Storage:	Store at -20°C
Batch Molecular Structure:	

2. ANALYTICAL DATA

HPLC:	Shows 99.1% purity
^{1}H NMR:	Consistent with structure
Mass Spectrum:	Consistent with structure
UV Spectrum:	Consistent with structure
λ_{max}:	470 nm (80:20 Ethanol: Water)
λ_{ex}:	491 nm (80:20 Ethanol: Water)
λ_{em}:	728 nm (80:20 Ethanol: Water)

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Description:

Key information: QM-FN-SO3 is a near-infrared (NIR) aggregation-induced emission active probe for in vivo imaging of amyloid β (Aβ) plaques. Blood brain barrier penetrant. Used for: detection of Aβ plaques in vitro, in situ and in vivo. Application: confocal microscopy and in vivo imaging. Properties and Photophysical Data: QM-FN-SO3 shows high binding affinity, ultra-high sensitivity, low signal-to-noise ratio, and large stokes shift (170 nm) reducing excitation light-induced self-quenching. Excitation and emission maxima (λ) are 488 nm and 680 nm, respectively.

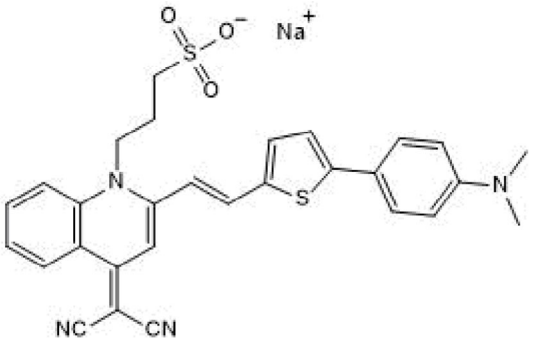
Physical and Chemical Properties:

Batch Molecular Weight: 564.65

Physical Appearance: Dark brown solid

Minimum Purity: ≥95%

Batch Molecular Structure:



Storage: Store at -20°C

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

DMSO to 50 mM
water to 20 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Yan *et al* (2023) Preparation of near-infrared AIEgen-active fluorescent probes for mapping amyloid-β plaques in brain tissues and living mice. Nat.Protoc. ***18*** 1316. PMID: 36697872.

Su *et al* (2022) Strategic design of amyloid-β species fluorescent probes for Alzheimer's disease. ACS Chem.Neurosci. ***13*** 540. PMID: 35132849.

Fu *et al* (2019) Rational design of near-infrared aggregation-induced-emission-active probes: in situ mapping of amyloid-β plaques with ultrasensitivity and high-fidelity. J.Am.Chem.Soc. ***141*** 3171. PMID: 30632737.