

# PRODUCT INFORMATION



## ThioFluor 623

Item No. 13083

**CAS Registry No.:** 1004324-99-5  
**Formal Name:** N-[4-[(1E)-2-[4-cyano-5-(dicyanomethylene)-2,5-dihydro-2,2-dimethyl-3-furanyl]ethenyl]phenyl]-N-[2-[2-(2-methoxyethoxy)ethoxy]ethyl]2,4-dinitrobenzenesulfonamide

**Synonyms:** Fluorescent Thiol Probe

**MF:** C<sub>31</sub>H<sub>30</sub>N<sub>6</sub>O<sub>10</sub>S

**FW:** 678.7

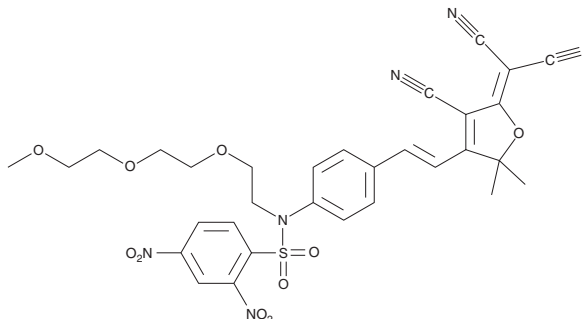
**Purity:** ≥98%

**Ex./Em. Max:** 563/623 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** ≥2 years



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

### Laboratory Procedures

ThioFluor 623 is supplied as a crystalline solid. A stock solution may be made by dissolving the ThioFluor 623 in the solvent of choice, which should be purged with an inert gas. ThioFluor 623 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of ThioFluor 623 in these solvents is approximately 20 mg/ml.

### Description

The rapid, selective, and sensitive sensing of thiols is important in diverse areas of research. This Thiofluor 623 responds upon exposure to thiols with an increase in fluorescence intensity of up to 120-fold.<sup>1</sup> The response is selective for thiols and occurs in aqueous media.<sup>1</sup> In the absence of thiols, the probe is essentially non-fluorescent; thiols cause cleavage of the probe, generating a fluorophore with an absorption maximum of 563 nm and emission at 623 nm.<sup>1</sup> The fluorescence quantum yield of the cleaved product, generated in response to thiols, increases in more viscous media, suggesting ideal performance in biological systems and applicability to single-molecule or 2-photon sensing schemes. The Thiofluor 623 is cell-permeable and reacts selectively with intracellular thiols.<sup>1</sup> The pseudo-first order rate constant (k<sub>obs</sub>) depends on substrate (e.g., 2.1 x 10<sup>-3</sup> s<sup>-1</sup> for cysteine, 2.0 x 10<sup>-5</sup> s<sup>-1</sup> for human serum albumin).<sup>1</sup>

### Reference

1. Bouffard, J., Kim, Y., Swager, T.M., *et al.* A highly selective fluorescent probe for thiol bioimaging. *Org. Lett.* **10**(1), 37-40 (2008).

#### 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.

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