



**ThioStar™**

**Thiol**

**Fluorescent Detection Reagent**

**Catalog Number L002-50UG**

Developed under an exclusive agreement with Berry and Associates.  
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**Please read this insert completely prior to using the product.**

**FOR RESEARCH USE ONLY  
NOT FOR USE IN DIAGNOSTIC PROTOCOLS**

# ThioStar™ Fluorescent Thiol Detection Reagent

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1 vial

50  $\mu$ g

Catalog Number L002-50UG

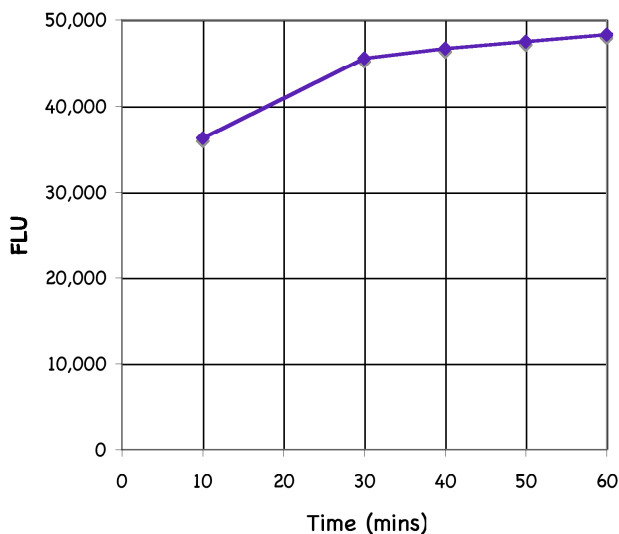
ThioStar thiol detection substrate stored in a desiccator.

## **Instructions for Use**

ThioStar™ Fluorescent Thiol Detection Reagent is a component of our DetectX™ Thiol Detection and our Glutathione Detection kits. The non-fluorescent ThioStar Reagent reacts with free thiol groups to generate a brightly fluorescent stable product that can be measured in most plate and cuvette fluorescent readers capable of excitation at 370-410 nm and reading at 490-550 nm. This 50  $\mu$ g size allows the end user to measure SH groups in a variety of formats. Bulk amounts are available upon request.

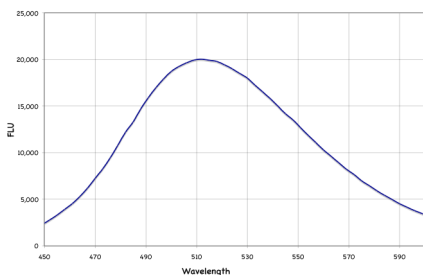
We recommend dissolving the ThioStar Reagent in dry acetonitrile, DMF or DMSO stored over molecular sieves (such as Sigma-Aldrich Catalog Number 41647). Store the reconstituted ThioStar at -20°C in the shipping desiccator for long-term storage. We recommend dissolving ThioStar at 100-500  $\mu$ g/mL in DMSO (500-100  $\mu$ L). The ThioStar reagent will react specifically with thiol groups in a variety of buffers and at pH's that range from 6 to 8.5. Typical phosphate, Tris or borate buffers are all compatible with ThioStar. Strong nucleophiles such as azide, ProClin and Kathon may react with ThioStar and should be avoided. The end user should test other buffers for compatibility. ThioStar is reasonably soluble in aqueous buffers at about 10  $\mu$ g/mL and stable for up to 4 hours at pH 7.

The reaction of ThioStar with thiols will occur within 30 minutes. We show a typical time course for the reaction below at room temperature. The resulting signal is stable in neutral buffered aqueous solution for at least 24 hours, however some hydrolysis of the thiol reacting maleimide group does occur. We recommend reading the resultant signal between 10 and 60 minutes after initiation. We suggest using ThioStar in large excess as the starting substrate has very low fluorescence and is 2-3 times less susceptible to hydrolysis than other such thiol reagents as CPM and fluorescein maleimide.

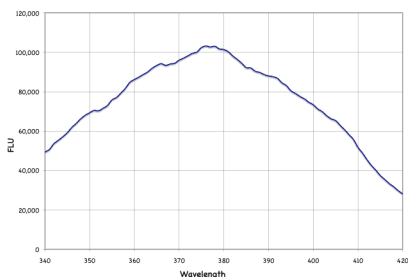


Upon reacting with a thiol containing material, ThioStar changes to a brightly fluorescent product with a fluorescent maxima at 512 nm. The emission and excitation spectra are shown below.

**Emission Spectra**



**Excitation Spectra**



The excitation maxima is at  $378 \pm 3$  nm and the emission maxima is at  $512 \pm 3$  nm. As with most fluorophores, the maximum excitation occurs at wavelengths higher than the absorption maxima allowing ThioStar to be excited at wavelengths as high as 430 nm.

## LIMITED WARRANTY

Luminos LLC warrants that at the time of shipment this product is free from defects in materials and workmanship. This warranty is in lieu of any other warranty expressed or implied, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

We must be notified of any breach of this warranty within 48 hours of receipt of the product. No claim shall be honored if we are not notified within this time period, or if the product has been stored in any way other than outlined in this publication. The sole and exclusive remedy of the customer for any liability based upon this warranty is limited to the replacement of the product, or refund of the invoice price of the goods.



## CONTACT INFORMATION

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