



ARBOR
ASSAYS

ThioStar[®]

Size	Catalog Number
50 µg	L002-50UG
100 µg	L002-100UG
250 µg	L002-250UG
500 µg	L002-500UG

THIOL FLUORESCENT DETECTION REAGENT

Please read this insert completely prior to using the product.

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

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Size	Catalog Number
50 µg	L002-50UG
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500 µg	L002-500UG

ThioStar thiol detection substrate is supplied in a desiccator and should be stored in a desiccator at 4°C or lower.

INSTRUCTIONS FOR USE

ThioStar® Fluorescent Thiol Detection Reagent is a component of many of our 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 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 DMSO stored over molecular sieves (such as Sigma-Aldrich Catalog Number 41647). Alternative solvents are acetonitrile or DMF. Store the reconstituted ThioStar at -20°C in the shipping desiccator for long term storage. We recommend dissolving ThioStar at 100-500 µg/mL.

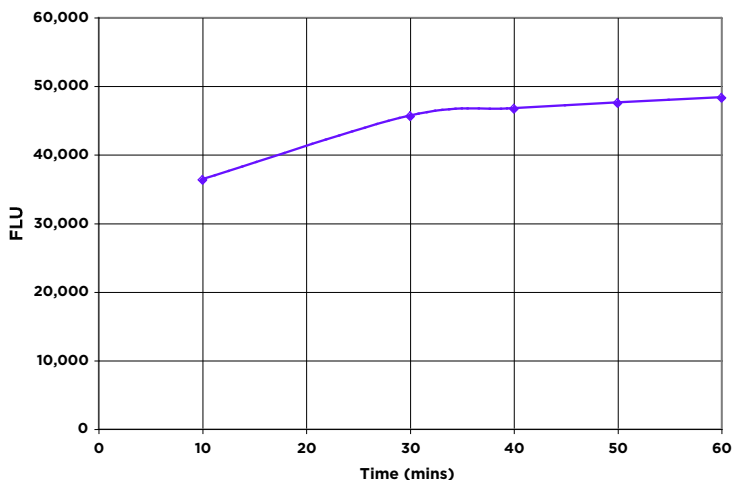
The ThioStar reagent will react specifically with thiol groups in a variety of buffers and at pH's that range from <6 to >8.5. Typical phosphate, Tris or borate buffers are all compatible with ThioStar. The end user should test other buffers for compatibility. ThioStar is reasonably soluble in aqueous buffers at about 10 µg/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 thiol reagents, such as CPM and fluorescein maleimide.

ThioStar will react with strong nucleophiles. Buffers containing the preservatives sodium azide, Proclin™ and Kathon™ will react with the substrate.



ThioStar[®] REACTION KINETICS

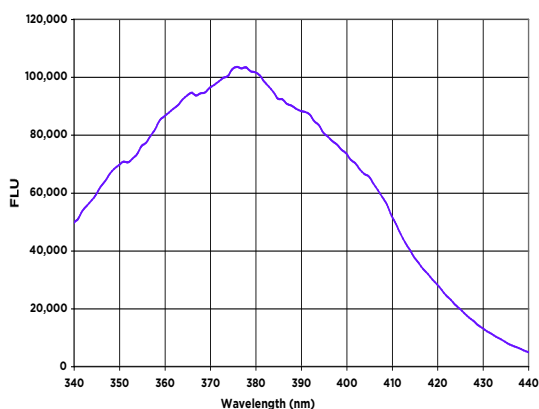
Reacting ThioStar with N-Acetylcysteine in PBS at pH 7.0 results in a rapid binding of the ThioStar maleimide group to the free SH group with resulting fluorescence.



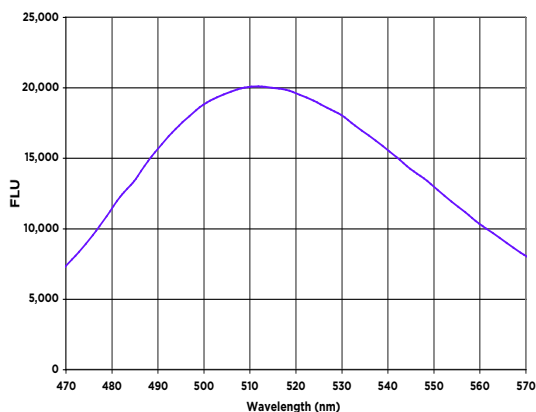
ThioStar[®]-SH ADDUCT FLUORESCENCE PROPERTIES

Excitation and emission spectra of a ThioStar-SH adduct run on a Shimadzu Scanning Fluorometer, RF-5301 PC in PBS.

Excitation



Emission



LIMITED WARRANTY

Arbor Assays 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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