

Hello Bio, Inc.  
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500  
F. 609-228-4994

customercare-usa@hellobio.com



# DATASHEET

Thioflavin X (ThX)

## Product overview

<b>Name</b>	Thioflavin X (ThX)
<b>Cat No</b>	HB17774
<b>Biological action</b>	Dyes & stains
<b>Description</b>	Next generation, cell-permeable fluorescent amyloid stain (5x brighter than Thioflavin T)

## Biological Data

<b>Application notes</b>	Novel, next generation cell-permeable fluorescent amyloid stain for <i>in vitro</i> <b><i>β</i>-Amyloid Peptide (1-42) (human)</b> staining in brain tissues. Shows 5x increase in brightness and 7x increase in binding affinity to amyloidogenic proteins to display superior photophysical and binding properties compared to <b>Thioflavin T (ThT)</b> . Unlike Thioflavin T, Thioflavin X (ThX) can be used for monitoring structural changes of amyloid $\beta$ oligomers. The improved optical properties (extinction coefficient, quantum yield and brightness) of Thioflavin X (ThX) allow monitoring of structural differences in oligomeric species which is not observable with Thioflavin T imaging. It is suitable for studying unique structural amyloid features in bulk and on a single-aggregate level and also allows detection of amyloid $\beta$ -sheet species at the early stages of protein aggregation. Also suitable for use in super-resolution microscopy with ~20nm resolution.
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## Solubility & Handling

<b>Important</b>	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use
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## Chemical Data

<b>Chemical name</b>	6-methoxy-3-methyl-2-(4-pyrrolidin-1-ylphenyl)-1,3-benzothiazol-3-ium iodide
<b>Molecular Weight</b>	452.35
<b>Molecular Formula</b>	C <sub>19</sub> H <sub>21</sub> IN <sub>2</sub> OS
<b>CAS Number</b>	2683063-26-3
<b>PubChem identifier</b>	170907366
<b>SMILES</b>	[I-].COC1=CC2=C(C=C1)[N+](C)=C(S2)C1=CC=C(C=C1)N1CCCC1
<b>Source</b>	Synthetic
<b>InChiKey</b>	IJDBRVINIKHPDK-UHFFFAOYSA-M
<b>Appearance</b>	Orange solid

## References

**Cavity Lasing Characteristics of Thioflavin T and Thioflavin X in Different Solvents and Their Interaction with DNA for the Controlled Reduction of a Light Amplification Threshold in Solid-State Biofilms.**

Rusakov K et al (2023) ACS applied optical materials 1

**PubMedID** [38149104](#)

**ThX - a next-generation probe for the early detection of amyloid aggregates.**

