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DATASHEET

Thioflavin X (ThX)

Product overview

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

Biological Data

Application notes	Novel, next generation cell-permeable fluorescent amyloid stain for <i>in vitro</i> <i>β</i>-Amyloid Peptide (1-42) (human) 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 Thioflavin T (ThT) . Unlike Thioflavin T, Thioflavin X (ThX) can be used for monitoring structural changes of amyloid β 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 β -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

Important	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

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

