

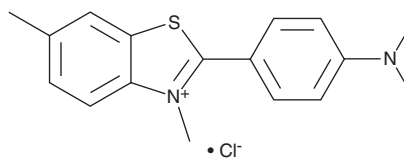
PRODUCT INFORMATION



Thioflavin T

Item No. 32553

| | |
|--------------------------|-----------------------------------------------------------------------|
| CAS Registry No.: | 2390-54-7 |
| Formal Name: | 2-[4-(dimethylamino)phenyl]-3,6-dimethylbenzothiazolium, monochloride |
| Synonym: | ThT |
| MF: | C ₁₇ H ₁₉ N ₂ S • Cl |
| FW: | 318.9 |
| Purity: | ≥90% |
| UV/Vis.: | λ _{max} : 417 nm |
| Ex./Em. Max: | 385-450/445-482 nm |
| Supplied as: | A crystalline solid |
| Storage: | -20°C |
| Stability: | ≥4 years |



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

Laboratory Procedures

Thioflavin T is supplied as a crystalline solid. A stock solution may be made by dissolving the thioflavin T in the solvent of choice, which should be purged with an inert gas. Thioflavin T is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of thioflavin T in these solvents is approximately 1 mg/ml.

Thioflavin T is slightly soluble in PBS (pH 7.2). For maximum solubility in aqueous buffers, thioflavin T should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Thioflavin T has a solubility of approximately 0.33 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Thioflavin T is a fluorescent probe for amyloid fibrils.¹ It displays excitation/emission maxima of 385/445 nm, respectively, and exhibits an increase in fluorescence intensity and a shift in excitation/emission maxima to 450/482 nm upon binding to amyloid fibrils.^{1,2} The fluorescence intensity is also pH dependent, increasing in intensity as the pH increases.² Thioflavin T binds to different types of amyloid fibrils with varying affinity, over two orders of magnitude, depending on type and binding mode.³ It has been used with fluorescence microscopy to visualize brain amyloid fibril plaques in a rat model of Alzheimer's disease.⁴

References

1. Biancalana, M. and Koide, S. Molecular mechanism of Thioflavin-T binding to amyloid fibrils. *Biochim. Biophys. Acta* **1804(7)**, 1405-1412 (2010).
2. Naiki, H., Higuchi, K., Hosokawa, M., et al. Fluorometric determination of amyloid fibrils *in vitro* using the fluorescent dye, thioflavin T. *Anal. Biochem.* **177(2)**, 244-249 (1989).
3. Sulatskaya, A.I., Kuznetsova, I.M., Belousov, M.V., et al. Stoichiometry and affinity of thioflavin T binding to Sup35p amyloid fibrils. *PLoS One* **11(5)**, e0156314 (2016).
4. Alimohammadi-Kamalabadi, M., Eshraghian, M., Zarindast, M.-R., et al. Effect of creatine supplementation on cognitive performance and apoptosis in a rat model of amyloid-beta-induced Alzheimer's disease. *Iran J. Basic Med. Sci.* **19(11)**, 1159-1165 (2016).

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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