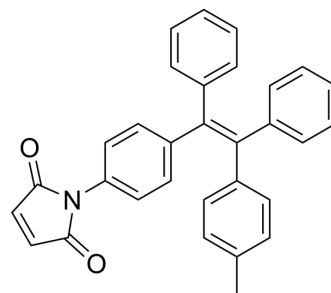


## TPE-MI

<b>Cat. No.:</b>	HY-143218
<b>CAS No.:</b>	1245606-71-6
<b>Molecular Formula:</b>	C <sub>31</sub> H <sub>23</sub> NO <sub>2</sub>
<b>Molecular Weight:</b>	441.52
<b>Target:</b>	Huntingtin; Parasite
<b>Pathway:</b>	Neuronal Signaling; Anti-infection
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 2 years; -20°C, 1 year (protect from light)



## SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 44.15 mg/mL (100.00 mM; Need ultrasonic)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>2.2649 mL</td> <td>11.3245 mL</td> <td>22.6490 mL</td> </tr> <tr> <td>5 mM</td> <td>0.4530 mL</td> <td>2.2649 mL</td> <td>4.5298 mL</td> </tr> <tr> <td>10 mM</td> <td>0.2265 mL</td> <td>1.1325 mL</td> <td>2.2649 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	2.2649 mL	11.3245 mL	22.6490 mL	5 mM	0.4530 mL	2.2649 mL	4.5298 mL	10 mM	0.2265 mL	1.1325 mL	2.2649 mL
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	Please refer to the solubility information to select the appropriate solvent.																					
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (5.66 mM); Clear solution																					

## BIOLOGICAL ACTIVITY

<b>Description</b>	TPE-MI (Tetraphenylethene maleimide) is a thiol probe for measuring unfolded protein load and proteostasis in cells. TPE-MI can report imbalances in proteostasis in induced pluripotent stem cell models of Huntington disease, as well as cells transfected with mutant Huntingtin exon 1 before the formation of visible aggregates. TPE-MI also detects protein damage following dihydroartemisinin research of the malaria parasites <i>Plasmodium falciparum</i> <sup>[1][2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Plasmodium
<b>In Vitro</b>	TPE-MI is inherently non-fluorescent until it is conjugated to a thiol via the maleimide. TPE-MI fluorescence is activated upon labelling free cysteine thiols, normally buried in the core of globular proteins that are exposed upon unfolding <sup>[1]</sup> . TPE-MI (50 μM; 0-60 min) exhibits a homogeneous cytoplasmic labelling pattern in live HeLa cells, with a lower level of labelling in the nucleus and apparent concentration in the region of the ER, which was anticipated as a major location for protein synthesis and folding <sup>[1]</sup> . At the high expression level, the mutant 97Q form of Httex1 was associated with an elevated TPE-MI fluorescence signal relative to a non-disease-causing 25Q form of Httex1 <sup>[1]</sup> .

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TPE-MI consists of the aggregation-induced emission (AIE) fluorogen tetraphenylethane (TPE) and the thiol-reactive group maleimide (MI), thereby possessing both AIE phenomenon and selective thiol reactivity<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## REFERENCES

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- [1]. Chen MZ, et al. A thiol probe for measuring unfolded protein load and proteostasis in cells. Nat Commun. 2017;8(1):474. Published 2017 Sep 7.
- [2]. Hu Q, et al. In Situ Monitored Vortex Fluidic-Mediated Protein Refolding/Unfolding Using an Aggregation-Induced Emission Bioprobe. Molecules. 2021;26(14):4273. Published 2021 Jul 14.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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