

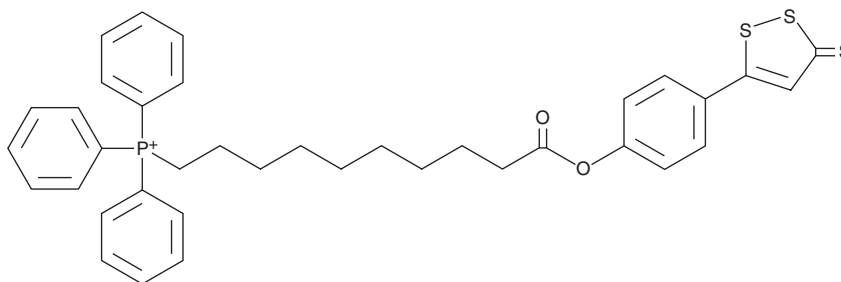
# PRODUCT INFORMATION



## AP39

Item No. 17100

**CAS Registry No.:** 1429173-57-8  
**Formal Name:** [10-oxo-10-[4-(3-thioxo-3H-1,2-dithiol-5-yl)phenoxy]decyl] triphenyl-phosphonium  
**MF:** C<sub>37</sub>H<sub>38</sub>O<sub>2</sub>PS<sub>3</sub>  
**FW:** 641.9  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 226, 267, 319, 430 nm  
**Supplied as:** A solution in dichloromethane  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

AP39 is supplied as a solution in dichloromethane. To change the solvent, simply evaporate the dichloromethane under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of AP39 in these solvents is approximately 16, 20, and 5 mg/ml, respectively.

AP39 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the dichloromethane solution of AP39 should be diluted with the aqueous buffer of choice. The solubility of AP39 in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

AP39 is a compound used to increase the levels of hydrogen sulfide (H<sub>2</sub>S) within mitochondria.<sup>1</sup> It consists of a mitochondria-targeting motif (triphenylphosphonium) coupled to an H<sub>2</sub>S-donating moiety (dithiolethione) by an aliphatic linker. AP39 (30-300 nM) dose-dependently increases H<sub>2</sub>S levels in endothelial cells, predominantly in mitochondrial regions.<sup>1</sup> It stimulates mitochondrial electron transport and improves cellular bioenergetic function at lower concentrations (30-100 nM), while having an inhibitory effect at 300 nM.<sup>1</sup> Under oxidative stress conditions induced by glucose oxidase, AP39 has antioxidant and cytoprotective effects.<sup>1</sup> AP39 is effective *in vivo*, inhibiting voltage-dependent T-type calcium channels and improving hemodynamic parameters in rats.<sup>2</sup>

### References

1. Szczesny, B., Módis, K., Yanagi, K., *et al.* AP39, a novel mitochondria-targeted hydrogen sulfide donor, stimulates cellular bioenergetics, exerts cytoprotective effects and protects against the loss of mitochondrial DNA integrity in oxidatively stressed endothelial cells *in vitro*. *Nitric Oxide* **41**, 120-130 (2014).
2. Tomasova, L., Pavlovicova, M., Malekova, L., *et al.* Effects of AP39, a novel triphenylphosphonium derivatised anethole dithiolethione hydrogen sulfide donor, on rat haemodynamic parameters and chloride and calcium Cav3 and RyR2 channels. *Nitric Oxide* **46**, 131-144 (2015).

#### 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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