



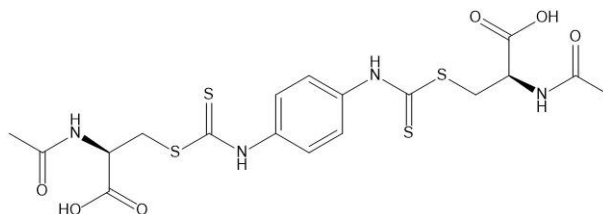
Catalog # 10-3238

2-AAPA

CAS 1133387-90-2

R,R'-2-Acetylamino-3-[4-(2-acetylamino-2-carboxyethylsulfanylthiocarbonylamino)-phenylthiocarbamoylsulfanyl]propionic acid, hydrate

Lot # S105223



2-AAPA (1133387-90-2) inhibits glutathione reductase and thioredoxin reductase, IC_{50} s=6.7 and 8.7 μ M respectively, and impairs mitochondrial function.¹ May be used to induce a cellular model of thiol oxidative stress.² Enhances sensitivity of cancer cell lines to X-ray irradiation.³ Induces G₂/M cell cycle arrest by inducing thiol oxidative stress resulting in α -tubulin S-glutathionylation-mediated microtubule depolymerization.⁴ Improves limb revascularization by glutathionylation and subsequent stabilization of HIF-1 α .⁵

- 1) de Souza *et al.* (2017), *Inhibition of reductase systems by 2-AAPA modulates peroxiredoxin oxidation and mitochondrial function in A172 glioblastoma cells* Toxicol. In Vitro, **42** 273
- 2) Xie *et al.* (2014), *Evaluation of a dithiocarbamate derivative as a model of thiol oxidate stress in H9c2 rat cardiomyocytes*; Free Radic. Biol. Med. **70** 214
- 3) Zhao *et al.* (2009), *Increase in thiol oxidative stress by glutathione reductase inhibition as a novel approach to enhance cancer sensitivity to X-ray irradiation*; Free Radic. Biol. Med., **47** 176
- 4) Li *et al.* (2017), *2-acetylamino-3-[4-(2-acetylamino-2-carboxyethylsulfanylthiocarbonylamino)phenylthiocarbamoylsulfanyl] propionic acid, a glutathione reductase inhibitor, induces G2/M cell cycles arrest through generation of thiol oxidative stress in human esophageal cancer cells*; Oncotarget, **8** 61846
- 5) Watanabe *et al.* (2016), *Glutathione adducts induced by ischemia and deletion of glutathione reductase-1 stabilize HIF-1 α and improve limb revascularization*; Proc. Natl. Acad. Sci. USA, **113** 6011

PHYSICAL DATA

Molecular Weight: 518.65
Molecular Formula: C₁₈H₂₂N₄O₆S₄
Purity: 95% by HPLC
NMR: (Conforms)
Solubility: DMSO (up to 50 mg/ml)
Physical Description: White or off-white solid
Storage and Stability: Store as supplied desiccated at -20°C for up to 2 years from the date of purchase.
Solutions in DMSO may be stored at -20°C for up to 1 month.

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