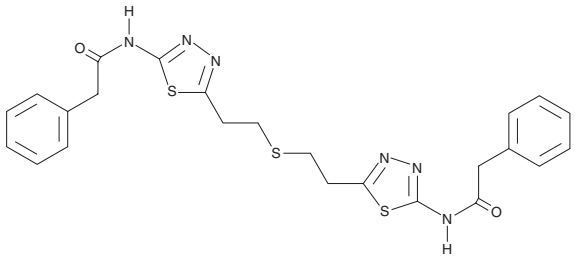
PRODUCT INFORMATION

BPTES

Item No. 19284

CAS Registry No.:	314045-39-1
Formal Name:	N,N'-[thiobis(2,1-ethanediyl-1,3,4-thiadiazole-5,2-diyl)]*bis*-benzeneacetamide
MF:	$C_{24}H_{24}N_6O_2S_3$
FW:	524.7
Purity:	≥95%
UV/Vis.:	λ_{max}: 254 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

BPTES is supplied as a crystalline solid. A stock solution may be made by dissolving the BPTES in the solvent of choice, which should be purged with an inert gas. BPTES is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of BPTES in these solvents is approximately 20 and 10 mg/ml, respectively.

BPTES is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, BPTES should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. BPTES has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

BPTES is an allosteric inhibitor of kidney-type glutaminase 1 (GLS1; IC_{50} = 3.3 µM) that drives the formation of inactive GLS1 tetramers.[1] It is selective for GLS1 over GLS2, glutamate dehydrogenase, and γ-glutamyl transpeptidase. BPTES decreases glutaminase activity and reduces proliferation of aerobic P493 cells as well as induces cell death, increases the production of reactive oxygen species (ROS), and reduces ATP levels in hypoxic P493 cells.[2] It also decreases ATP-linked and uncoupled oxygen consumption in C2C12 myotubes when used in combination with UK 5099 (Item No. 16980) and/or etomoxir (Item No. 11969).[3] *In vivo*, BPTES (12.5 mg/kg) reduces tumor volume in a P493 lymphoma mouse xenograft model.[2]

References

1. Shukla, K., Feraris, D.V., Thomas, A.G., *et al.* Design, synthesis, and pharmacological evaluation of bis-2-(5-phenylacetamido-1,2,4-thiadiazol-2-yl)ethyl sulfide 3 (BPTES) analogs as glutaminase inhibitors. *J. Med. Chem.* **55(23)**, 10551-10563 (2012).
2. Le, A., Lane, A.N., Hamaker, M., *et al.* Glucose-independent glutamine metabolism via TCA cycling for proliferation and survival in B cells. *Cell. Metab.* **15(1)**, 110-121 (2012).
3. Vacanti, N.M., Divakaruni, A.S., Green, C.R., *et al.* Regulation of substrate utilization by the mitochondrial pyruvate carrier. *Mol. Cell* **56(3),** 425-435 (2014).

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