

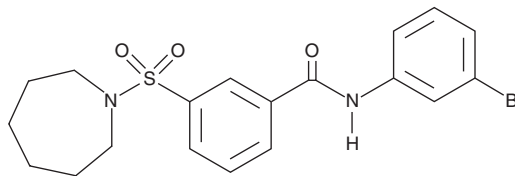
# PRODUCT INFORMATION



## AK-7

Item No. 14004

**CAS Registry No.:** 420831-40-9  
**Formal Name:** N-(3-bromophenyl)-3-[(hexahydro-1H-azepin-1-yl)sulfonyl]-benzamide  
**MF:** C<sub>19</sub>H<sub>21</sub>BrN<sub>2</sub>O<sub>3</sub>S  
**FW:** 437.4  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 269 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

AK-7 is supplied as a crystalline solid. A stock solution may be made by dissolving the XX in the solvent of choice, which should be purged with an inert gas. AK-7 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of AK-7 in these solvents is approximately 1, 5, and 15 mg/ml, respectively.

AK-7 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, AK-7 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. AK-7 has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

The sirtuin SIRT2 is a deacetylase which targets  $\alpha$ -tubulin, histone 4, forkhead transcription factors, and several other substrates.<sup>1</sup> It has roles in metabolic diseases, cancer, age-related disorders, and neurodegenerative diseases, potentially including Alzheimer's, Huntington's, and Parkinson's diseases.<sup>1-3</sup> AK-7 is a cell- and brain-permeable inhibitor of SIRT2 (IC<sub>50</sub> = 15.5  $\mu$ M).<sup>4</sup> In culture, it diminishes neuronal cell death induced by mutant huntingtin fragment.<sup>4</sup> In addition, AK-7 down-regulates cholesterol biosynthetic gene expression and reduces total cholesterol levels in neurons *in vivo*.<sup>4</sup>

### Reference

1. de Oliveira, R.M., Sarkander, J., Kazantsev, A.G., *et al.* SIRT2 as a therapeutic target for age-related disorders. *Front. Pharmacol.* **3**, 82 (2012).
2. Fridén-Saxin, M., Seifert, T., Landergren, M.R., *et al.* Synthesis and evaluation of substituted chroman-4-one and chromone derivatives as sirtuin 2-selective inhibitors. *J. Med. Chem.* **55(16)**, 7104-7113 (2012).
3. Xu, K., Dai, X.L., Huang, H.C., *et al.* Targeting HDACs: A promising therapy for Alzheimer's disease. *Oxid. Med. Cell. Longev.* 143269 (2011).
4. Taylor, D.M., Balabadra, U., Xiang, Z., *et al.* A brain-permeable small molecule reduces neuronal cholesterol by inhibiting activity of sirtuin 2 deacetylase. *ACS Chem. Biol.* **6(6)**, 540-546 (2011).

#### 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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