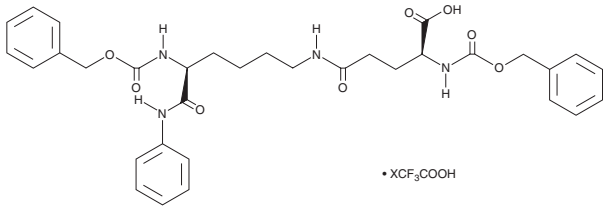
PRODUCT INFORMATION

MC3482 (trifluoroacetate salt)

Item No. 43725

Formal Name: (3S,12S)-12-carboxy-9,14-dioxo-16-phenyl-3-[(phenylamino)carbonyl]-15-oxa-2,8,13-triazahexadecanoic acid, 1-(phenylmethyl) ester, trifluoroacetate salt
MF: $C_{33}H_{38}N_4O_8 \bullet XCF_3COOH$
FW: 618.7
Purity: ≥85%
Supplied as: A 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

MC3482 (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the MC3482 (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. MC3482 (trifluoroacetate salt) is soluble (≥10 mg/ml) in DMSO. MC3482 (trifluoroacetate salt) is sparingly soluble (1-10 mg/ml) in ethanol.

Description

MC3482 is an inhibitor of sirtuin 5 (SIRT5).[1] It is selective for SIRT5 over SIRT1 and SIRT3 at 50 µM. MC3482 (50 µM) induces autophagy and mitophagy in MDA-MB-231 cells and decreases lipid droplet size and increases lipolysis and the oxygen consumption rate (OCR) in differentiated 3T3-L1 adipocytes.[1,2] *In vivo*, MC3482 (2 mg/kg) decreases brain water content, infarct volume, and neurological deficits in a mouse model of cerebral ischemia induced by middle cerebral artery occlusion (MCAO).[3] It decreases airway hyperresponsiveness, serum IgE levels, neutrophil and eosinophil bronchoalveolar lavage fluid (BALF) infiltration, epithelial hyperplasia, and mucus production in a mouse model of toluene-2,4-diisocyanate-induced asthma.[4] MC3482 increases the paw withdrawal threshold in a mouse model of complete Freund's adjuvant-induced inflammatory pain.[5]

References

1. Polletta, L., Vernucci, E., Carnevale, I., *et al.* SIRT5 regulation of ammonia-induced autophagy and mitophagy. *Autophagy* **11(2)**, 253-270 (2015).
2. Molinari, F., Feraco, A., Mirabilii, S., *et al.* SIRT5 inhibition induces brown fat-like phenotype in 3T3-L1 preadipocytes. *Cells* **10(5)**, 1126 (2021).
3. Xia, Q., Yu, Y., Zhan, G., *et al.* The sirtuin 5 inhibitor MC3482 ameliorates microglia-induced neuroinflammation following ischaemic stroke by upregulating the succinylation level of annexin-A1. *J. Neuroimmune Pharmacol.* **19(1)**, 17 (2024).
4. Wu, J., Wang, Y., Zhang, Q., *et al.* SIRT5 regulates fatty acid oxidation and mitochondrial oxidative stress to exacerbate airway inflammation in experimental asthma. *Cell. Signal.* **136**, 112149 (2025).
5. Zuo, C.-Y., Gou, C.-Y., Zhang, C.-S., *et al.* Role of SIRT5 in the analgesic effectiveness of moxibustion at ST36 in mice with inflammatory pain. *Heliyon* **9(7)**, e17765 (2023).

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