Small Molecules

EX527

Epigenetic modifier; Inhibits SIRT1 histone deacetylase

Catalog # 73654

10 mg

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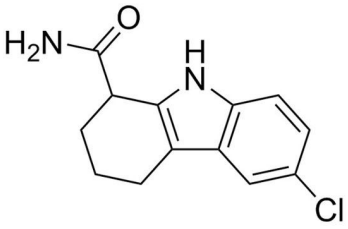
Product Description

EX527 is a cell-permeable, selective inhibitor of mammalian sirtuin 1 (SIRT1; IC_{50} = 98 nM) over SIRT2 and SIRT3 and has no effect on other histone deacetylases (HDACs; Nayagam et al.). SIRT1 is a nicotinamide adenine dinucleotide (NAD)-dependent deacetylase with roles in energy metabolism and inflammation. Studies have shown that EX527 inhibits sirtuins by forming a trimeric sirtuin complex with an NAD+-derived coproduct (Gertz et al.).

Molecular Name:	EX527
Alternative Names:	Selisistat
CAS Number:	49843-98-3
Chemical Formula:	$C_{13}H_{13}ClN_2O$
Molecular Weight:	248.7 g/mol
Purity:	≥ 98%
Chemical Name:	6-chloro-2,3,4,9-tetrahydro-1H-carbazole-1-carboxamide
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 80 mM · Ethanol ≤ 20 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 10 mg in 4.02 mL of DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

DIFFERENTIATION
· Increases the production of oligodendrocytes from differentiating neural stem cells and neural progenitor cells in vitro (Rafalski et al.).
IMMUNOLOGY
· Restores the microvascular response during the hypoinflammatory phase in a mouse model of sepsis, and enhances the systemic innate immune response (Vachharajani et al.).
DISEASE MODELING
· Delays cyst growth in kidneys of PKD1 knockout mouse models (Zhou et al.).

References

Gertz M et al. (2013) Ex-527 inhibits Sirtuins by exploiting their unique NAD+-dependent deacetylation mechanism. Proc Natl Acad Sci USA 110(30): E2772–81.
Nayagam VM et al. (2006) SIRT1 modulating compounds from high-throughput screening as anti-inflammatory and insulin-sensitizing agents. J Biomol Screen 11(8): 959–67.
Rafalski VA et al. (2013) Expansion of oligodendrocyte progenitor cells following SIRT1 inactivation in the adult brain. Nat Cell Biol 15(6): 614–24.
Vachharajani VT et al. (2014) SIRT1 inhibition during the hypoinflammatory phenotype of sepsis enhances immunity and improves outcome. J Leukoc Biol 96(5): 785–96.
Zhou X et al. (2013) Sirtuin 1 inhibition delays cyst formation in autosomal-dominant polycystic kidney disease. J Clin Invest 123(7): 3084–98.

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).