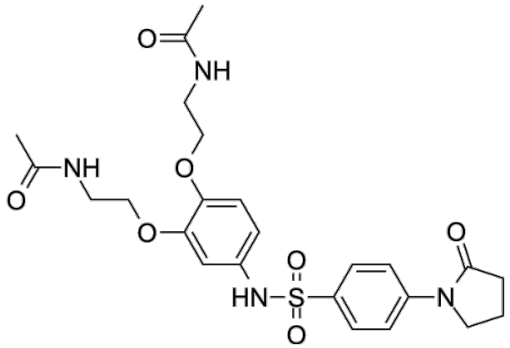
Product Data Sheet

Product Name: SZ0232
Cat. No.: GC81439

Chemical Properties

Cas. No.	924851-91-2		
Formula	$C_{24}H_{30}N_4O_7S$	M.Wt	518.58
Solubility	DMSO: 100 mg/mL (192.83 mM; Need ultrasonic)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			



Background

SZ0232 is a selective mPGES-2 inhibitor. SZ0232 binds to the active site of mPGES-2 via hydrogen bonds and π-π stacking, reduces the production of prostaglandin E 2 (PGE 2) and blocks the PGE

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2 - EP3 pathway. SZ0232 regulates Ferroptosis by activating the heme-dependent p53/SLC7A11/GPX4 axis, inhibits lipid peroxidation, and protects renal tubules. SZ0232 enhances glucose-stimulated insulin secretion, inhibits β-cell senescence, and improves glucose homeostasis. SZ0232 reduces renal lipid accumulation, alleviates fibrosis, and ameliorates renal dysfunction in diabetic mice. SZ0232 inhibits renal cyst growth in polycystic kidney disease models. SZ0232 exhibits an insulinotropic effect that strengthens with the increase of animal age. SZ0232 can be used in studies related to type 2 diabetes, acute kidney injury, diabetic kidney disease, and autosomal dominant polycystic kidney disease [1] [2] [3] [4].

In Vivo, SZ0232 (i.p.; once daily; for 8 consecutive weeks; dose of 0.5 mg/kg) improves glucose tolerance, enhances the expression of β-cell identity markers and reduces β-cell senescence in db/db mice, with no systemic toxicity observed[1]. SZ0232 (1 mg/kg; i.p.; once daily for 7 consecutive days) protects male C57BL/6 J mice against cisplatin-induced acute kidney injury (AKI), alleviating renal dysfunction, tubular injury, lipid peroxidation and cell death without altering PGE2 levels[2]. SZ0232 (1 mg/kg; i.p.; once daily; for 7 consecutive days) protects male C57BL/6 J mice against ischemia/reperfusion-induced acute kidney injury (AKI), and alleviates renal dysfunction, renal tubular injury, lipid peroxidation and cell death[2]. SZ0232 (0.5 mg/kg; i.p.; once every two days; for 8 weeks) inhibits mPGES-2, improves renal lipid metabolism, alleviates renal function injury, podocyte injury and tubulointerstitial fibrosis, thereby blocking the progression of diabetic kidney disease (DKD)[3]. SZ0232 (2 mg/kg/day; subcutaneous injection; daily, for 7 consecutive days) significantly reduces the kidney weight/body weight ratio, renal cyst index, and proliferation level of renal epithelial cells in ADPKD mouse models[4].

In Vitro, SZ0232 (10-9 to 10-3; 10 min pre-incubation, 100 s assay incubation) potently inhibits mPGES-2 enzymatic activity via specific binding to the enzyme's active site, and reduces PGE2 production in cell-free biochemical assays[1]. SZ0232 (0.01-100 μM) shows no significant cytotoxicity in MIN6 mouse pancreatic islet β cells[1]. SZ0232 inhibits β-cell senescence induced by mPGES-2 overexpression in INS-1 rat pancreatic islet β-cells[1]. SZ0232 upregulates the expression of ferroptosis protective markers GPX4 and SLC7A11 in renal tubular epithelial cells HK-2[2]. SZ0232 (40-160 μM; 8 days) inhibits Forskolin -induced cyst growth in MDCK cells in a dose-dependent manner, with the maximum reduction in cyst diameter observed at the concentration of 160 μM[4].

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SZ0232 (0.1-1000 μM) shows no effect on the viability of normal MDCK cells[4].

References:

[1]. Zhong D, et al. mPGES-2 blockade antagonizes β-cell senescence to ameliorate diabetes by acting on NR4A1. Nat Metab. 2022;4(2):269-283.
[2]. Zhong D, et al. Targeting mPGES-2 to protect against acute kidney injury via inhibition of ferroptosis dependent on p53. Cell Death Dis. 2023;14(10):710. Published 2023 Oct 31.
[3]. Zhong D, et al. Genetic or pharmacologic blockade of mPGES-2 attenuates renal lipotoxicity and diabetic kidney disease by targeting Rev-Erbα/FABP5 signaling. Cell Rep. 2024;43(4):114075.
[4]. Zhong DD, et al. Inhibiting mPGES-2 impedes renal cyst growth in mice with polycystic kidney disease. Acta Pharmacol Sin. 2026;47(3):689-700.

Caution: Product has not been fully validated for medical applications. For research use only.
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