

Product Data Sheet

Product Name: 10Panx
Cat. No.: GC13863

Chemical Properties

Cas. No. 955091-53-9

SMILES CC(C)C(C(=O)NC(CC(=O)O)C(=O)NC(CO)C(=O)NC(CC1=CC=C(C=C1)O)C(=O)O)NC(=O)C(CC2=CC=CC=C2)NC(=O)C(C)NC(=O)C(C)NC(=O)C(CCC(=O)N)NC(=O)C(CCN=C(N)N)NC(=O)C(CC3=CNC4=CC=CC=C43)N

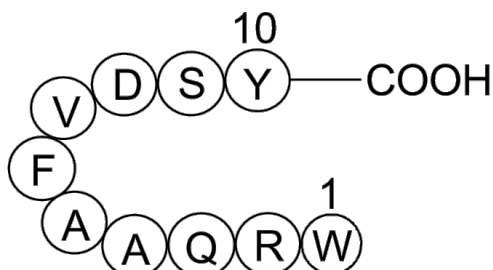
Formula C₅₈H₇₉N₁₅O₁₆ M.Wt 1242.37

Solubility ≥ 124.2mg/mL in DMSO 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



Protocol

Cell experiment [1]:

Cell lines HCT116 cells

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

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HCT116 cells were grown in DMEM medium with 10% (v/v) fetal bovine serum (FBS), 100µg/ml streptomycin, and 100U/ml penicillin at 37°C in 5%

CO₂/atmosphere. HCT116 cells were seeded in triplicates at a density of 1×10^4

Preparation Method cells per well in the 96-well plates containing 100µl culture medium (1% FBS) and allowed to adhere in a 5% CO₂ incubator at 37°C overnight. Cells were treated with 200µM 10Panx or PBS (vehicle) for 24, 48 and 72h. Cell viability was evaluated.

Reaction
Conditions 200µM; 24, 48 and 72h

Applications 10Panx treatment significantly reduced the cell viability of HCT116 cells in a time-dependent manner.

Animal experiment [2]:

Animal models Male Sprague-Dawley rats

Preparation Method Male Sprague-Dawley rats (250-280g) were housed singly in a standard environment with food and water ad libitum. A total of 80 rats were randomly assigned to 3 groups and treated with or without 10Panx: (1) in the sham group (n = 14), rats received anesthesia and vehicle injection; (2) in the surgery plus vehicle group, rats underwent MCAO under isoflurane anesthesia, and vehicle was administered intracerebroventricularly 30min before ischemia onset (n = 22); and (3) in the surgery plus 10Panx group, rats were administered intracerebroventricular injections of 10Panx (2µg/µl; 5µl) at 0.5h before MCAO under isoflurane anesthesia. Rats were sacrificed 48 hours after MCAO for experiments and the brain tissues were collected for analysis.

Dosage form 2µg/µl (5µl) for once; i.c.v.

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Applications 10Panx treatment significantly reduced the infarct volume and alleviate neurological deficits in MCAO model of rats.

References:

- [1] Fierro-Arenas A, Landskron G, Camhi-Vainroj I, et al. Pannexin-1 expression in tumor cells correlates with colon cancer progression and survival[J]. Life Sciences, 2024, 351: 122851.
- [2] Wei R, Bao W, He F, et al. Pannexin1 channel inhibitor (10panx) protects against transient focal cerebral ischemic injury by inhibiting RIP3 expression and inflammatory response in rats[J]. Neuroscience, 2020, 437: 23-33.

Background

10Panx is a potent Panx1 channel inhibitor that targets the W74 to Y83 segment of the ECL1 of Panx1 protein^[1]. 10Panx inhibits the P2X7 receptor activation-induced cleavage of caspase-1 and the processing and release of IL-1 β by suppressing Panx1^[2]. 10Panx has been widely used to alleviate the characteristic inflammatory responses in mouse models of asthma^[3].

In vitro, 10Panx (50 μ M) treatment for 20 hours significantly inhibited the formation of capillary-like structures in human dermal lymphatic endothelial cells (HDLECs)^[4]. Treatment with 10Panx at a concentration of 100 μ M for 6 hours delays the maturation of bovine oocytes and reduces the level of reactive oxygen species within the cells^[5]. The 72h treatment of HCT116 cells with 200 μ M 10Panx significantly inhibited cell proliferation^[6].

In vivo, 10Panx treatment via intraventricular injection of 5 μ l (2 μ g/ μ l) 0.5 hours before middle cerebral artery occlusion (MCAO) can reduce the infarct volume in rats and alleviate neurological deficits^[7]. A single intravenous injection of 2.58nmol/g dose of 10Panx reduced the induced dentin hypersensitivity of the first molar in rats^[8].

References:

- [1] Jiang M, Li X, Xie K. Pannexin channels in inflammation and tumorigenesis[J]. Frontiers in Cell and Developmental Biology, 2025, 13: 1647765.
- [2] Pelegrin P, Surprenant A. Pannexin-1 mediates large pore formation and interleukin-1 β release by the ATP-gated P2X7 receptor[J]. The EMBO journal, 2006, 25(21): 5071-5082.

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- [3] Martinez L A, Rasky A J, Morris S B, et al. Inhibition of Pannexin1 hemichannels in the airways epithelium reduces the characteristic inflammatory response in an asthmatic mouse model[J]. World Allergy Organization Journal, 2020, 13(8).
- [4] Boucher J, Simonneau C, Denet G, et al. Pannexin-1 in human lymphatic endothelial cells regulates lymphangiogenesis[J]. International Journal of Molecular Sciences, 2018, 19(6): 1558.
- [5] Dye Z T, Rutledge L V, Penuela S, et al. Pannexin 1 inhibition delays maturation and improves development of Bos taurus oocytes[J]. Journal of Ovarian Research, 2020, 13(1): 98.
- [6] Fierro-Arenas A, Landskron G, Camhi-Vainroj I, et al. Pannexin-1 expression in tumor cells correlates with colon cancer progression and survival[J]. Life Sciences, 2024, 351: 122851.
- [7] Wei R, Bao W, He F, et al. Pannexin1 channel inhibitor (10panx) protects against transient focal cerebral ischemic injury by inhibiting RIP3 expression and inflammatory response in rats[J]. Neuroscience, 2020, 437: 23-33.
- [8] Ohyama S, Ouchi T, Kimura M, et al. Piezo1-pannexin-1-P2X3 axis in odontoblasts and neurons mediates sensory transduction in dentinal sensitivity[J]. Frontiers in physiology, 2022, 13: 891759.

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