

Product Data Sheet

Product Name: QX77
Cat. No.: GC32962

Chemical Properties

Cas. No. 1798331-92-6

SMILES CC(NC1=CC=C(C2=NC3=CC=C(Cl)C=C3OC2)C=C1)=O

Formula $C_{16}H_{13}ClN_2O_2$ M.Wt 300.74

Solubility DMSO : ≥ 64 mg/mL (212.81 mM) 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.

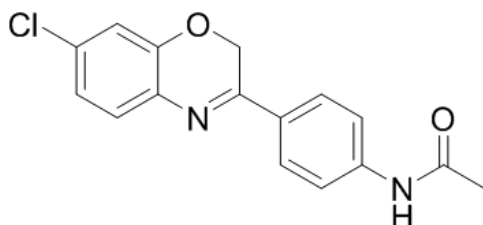
Caution: Product has not been fully validated for medical applications. For research use only.

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Structure



Protocol

Cell experiment [1]:

Cell lines Human pancreatic stellate cells (HPSCs)

Preparation Method HPSCs were cultured in Ham's F-12K medium supplemented with 20% fetal bovine serum (FBS) at 37°C, 5% CO₂. HPSCs were treated with TGF-β1 (5ng/mL) to induce activation, with or without QX77 (5ng/mL) and recombinant human MFG-E8 (20ng/mL) for 24 hours.

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Reaction
Conditions 5ng/mL; 24h

Applications QX77 upregulated LAMP2A expression and reversed the inhibitory effects of MFG-E8 on TGF- β 1-induced CMA in HPSCs. QX77 also eliminated MFG-E8's suppressive effects on collagen I and α -SMA expression, as well as MFG-E8's reduction of oxidative stress in activated HPSCs.

Animal experiment [2]:

Animal models Sprague-Dawley (SD) rats

Preparation Method Diabetic rats were established by streptozotocin (STZ) injection. QX77 (2.5mg/kg) was intravitreally injected on the first day of detectable hyperglycemia and maintained for 2 weeks. Animals were sacrificed for retinal analysis.

Dosage form 2.5mg/kg; i.p.

Applications QX77 significantly rescued retinal physiological function by reducing ACSL4 protein expression and lipid peroxidation (MDA and 4-HNE levels) in the RPE-Bruch's membrane-choriocapillaris complex.

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References:

- [1] Liu C, Sun W, Zhu T, et al. Glia maturation factor- β induces ferroptosis by impairing chaperone-mediated autophagic degradation of ACSL4 in early diabetic retinopathy. *Redox Biol.* 2022 Jun;52:102292.
- [2] Ren Y, Cui Q, Zhang J, et al. Z Milk Fat Globule-EGF Factor 8 Alleviates Pancreatic Fibrosis by Inhibiting ER Stress-Induced Chaperone-Mediated Autophagy in Mice. *Front Pharmacol.* 2021 Aug 5;12:707259.

Background

QX77 is a chaperone-mediated autophagy (CMA) activator^[1]. QX77 can activate CMA to ameliorate intracellular trafficking defects^[2], and also reduce ferroptosis and alleviate oxidative stress^[3-4].

In vitro, when human pancreatic stellate cells (HPSCs) treated with TGF- β 1 were co-treated with QX77 (5ng/mL) and 20ng/mL MFG-E8 for 24 hours, QX77 eliminated the inhibitory effect of MFG-E8 on the TGF- β 1-induced upregulation of LAMP2A expression and downregulation of MEF2D expression. QX77 attenuated the mitigating effect of MFG-E8 on oxidative stress^[5]. In SKOV3/DDP cells treated with DDP (6 μ g/mL), intervention with QX77 (10 μ M) for 12 hours enhanced cell viability and affected the expression and localization of autophagy-related proteins^[6].

In vivo, in a diabetic rat model, intravitreal injection of QX77 (2.5mg/kg) was administered once per week starting from the first day of model establishment for a duration of 2 weeks. QX77 significantly improved diabetes-induced impairment of retinal physiological function, reduced the expression of ACSL4 protein, decreased MDA levels and the accumulation of the toxic lipid peroxidation product 4-HNE in the retina, and reduced the number of autophagosomes, demonstrating a protective effect against early diabetic retinopathy^[4].

References:

- [1] Rahman F, Johnson JL, Ait Kbaich M, et al. Reconstitution of Rab11-FIP4 Expression Rescues Cellular Homeostasis in Cystinosis. *Mol Cell Biol.* 2024;44(12):577-589.
- [2] Li J, Zeng S, Sun Y, et al. Gluconic acid alleviates hypertrophic scar formation through binding PLOD1, reducing p-AKT signaling and activating autophagy. *Phytomedicine.* 2025 Jul 25;143:156825.
- [3] Liu C, Sun W, Zhu T, et al. Glia maturation factor- β induces ferroptosis by impairing chaperone-

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mediated autophagic degradation of ACSL4 in early diabetic retinopathy. Redox Biol. 2022 Jun;52:102292.

[4] Ren Y, Cui Q, Zhang J, et al. Z Milk Fat Globule-EGF Factor 8 Alleviates Pancreatic Fibrosis by Inhibiting ER Stress-Induced Chaperone-Mediated Autophagy in Mice. Front Pharmacol. 2021 Aug 5;12:707259.

[5] Du P, Xu X, Wang Y. Hsa_circ_0000585 promotes chemoresistance to cis-platin in epithelial cells of ovarian cancer by modulating autophagy. Biochem Biophys Res Commun. 2023 Oct 20;678:186-192.

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