Alagebrium chloride

Cat. No.: HY-106024B

CAS No.: 341028-37-3

Molecular Formula: $C_{13}H_{14}ClNOS$

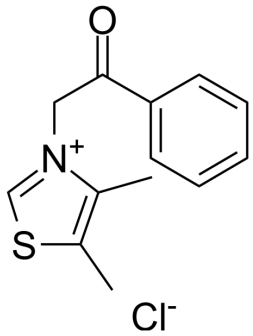
Molecular Weight: 267.77

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 2 years; -20°C, 1 year (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (186.73 mM; Need ultrasonic)

DMSO : ≥ 25 mg/mL (93.36 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.7345 mL	18.6727 mL	37.3455 mL
5 mM	0.7469 mL	3.7345 mL	7.4691 mL
10 mM	0.3735 mL	1.8673 mL	3.7345 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (373.45 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.34 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.34 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Alagebrium chloride (ALT711) is an advanced glycation end product (AGE) inhibitor.

IC_{50} & Target

AGE[1]

In Vitro

Alagebrium chloride is an advanced glycation end product (AGE) inhibitor. Endothelial cell (EC) proliferation is increased for all groups receiving Alagebrium (ALT-711), particularly when seeded on matrix from the AAo of obese (ZO) and diabetic (ZD) rats[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Blood pressure is not affected by treatment with Alagebrium.? In diabetic RAGE apoE double-KO mice, treatment with Alagebrium is associated with a modest reduction in renal mass and reduces hyperfiltration compare with nontreated mice. Treatment with Alagebrium in diabetic RAGE apoE double-KO mice is associated with a further reduction in glomerular collagen IV levels, approaching levels observed in control mice[1]. Body weight, heart rate (HR), and mean blood pressure (BP) are similar in Zucker lean (ZL), obese (ZO), and diabetic (ZD) groups in the absence or presence of Alagebrium (ALT-711). Alagebrium increases blood flow (BF) in ZO rats but reduces distal vascular resistance in ZD rats. A decrease in neointimal hyperplasia (NH) intrastrut thickness as a function of local radius is found in all groups with Alagebrium treatment.? A significant increase in TGF-β expression is also found in the AAo of ZL rats treated with Alagebrium[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	Human aortic endothelial cells (HAECs) are seeded on decellularized matrices derived from the abdominal aorta (AAo) of Zucker lean (ZL), obese (ZO), and diabetic (ZD) rats with or without Alagebrium (ALT-711) (20 μg/mL in Dulbecco's PBS with 1× antibiotic-antimycotic). Experiments are performed when cells reach 80 to 90% confluence. Flow chambers are sealed to the HAEC monolayers via a vacuum network. Flow is driven by a Masterflex L/S peristaltic pump in a humidified chamber heated to 37°C for 4 h. Leibovitz-15 medium, supplemented with 10% FBS, endothelial BulletKit, and 1× antibiotic-antimycotic solution, is used as the flow medium to maintain pH in the absence of CO_2[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	***RAGE apoE*** mice are randomized to be treated with Alagebrium (1 mg/kg/day by gavage), or no treatment (n=20/group). After 20 weeks of diabetes, mice are placed into individual metabolic cages for 24 h and urine is collected. Body weight as well as fluid and food intake are recorded. Urinary albumin excretion is estimated in urine samples by a mouse albumin enzyme-linked immunosorbent assay (ELISA) kit according to the kit protocol. Urinary and serum creatinine concentrations are measured by high-performance liquid chromatography (HPLC). Systolic blood pressure is assessed by a noninvasive tail cuff method in conscious mice at the end of the study[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Am J Transl Res. 2019 Mar 15;11(3):1569-1580.

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REFERENCES

[1]. Watson AM, et al. Alagebrium reduces glomerular fibrogenesis and inflammation beyond preventing RAGEactivation in diabetic apolipoprotein E knockout mice. Diabetes. 2012 Aug;61(8):2105-13.

[2]. Wang H, et al. Alagebrium inhibits neointimal hyperplasia and restores distributions of wall shear stress by reducing downstream vascular resistance in obese and diabetic rats. Am J Physiol Heart Circ Physiol. 2015 Oct;309(7):H1130-40.

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

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