Product Data Sheet

Product Name: Acarbose sulfate
Cat. No.: GC17266

Chemical Properties

Cas. No.	1221158-13-9		
SMILES	C[C@]1([H])[C@](N[C@@]2([H])C=C([C@](O)([H])[C@@](O)([H])[C@@]2([H])O)CO)([H])[C@@](O)([H])[C@](O)([H])[C@](O[C@]([C@@](O)([H])[C@](O)([H])[C@](O[C@]([C@@](O)([H])[C@](O)([H])[C@]3([H])O)([H])[C@@](O3)([H])CO)([H])O4)([H])[C@@]4([H])CO)([H])O1.OS(O)(=O)=O		
Formula	$C_{25}H_{45}NO_{22}S$	M.Wt	743.68
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Acarbose sulfate		

Protocol

Cell experiment:

Cell viability is determined using the MTT assay. Cells are seeded in 24-well culture plates at a density of 2×104 cells/well, incubated for 48 h, treated with acarbose at varying concentrations (0.5, 1.0, 2.0, 3.0, and 5.0 μM) for 24 h; or pre-treated with TNF-α (20 ng/mL) for either 24 h or 48 h to evaluate the dose-dependent effects of acarbose on VSMC growth and viability, cultured with 0.5 mg/mL MTT at 37°C in a humidified atmosphere of 5% CO2 for another 4 h, and solubilized with isopropanol. The viable cell number varies directly with the concentration of formazan product measured spectrophotometrically at 563 nm.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Animal experiment:

Twenty-four male New Zealand white rabbits, weighing 2500 g are used. They are individually housed in metal cages in an air-conditioned room (22 ± 2°C, 55 ± 5% humidity), under a 12 h light/12 h dark cycle with free access to food and water. All rabbits are randomLy assigned to four groups of 6 animals each and are fed either standard chow (Group I), high cholesterol diet (HCD; containing 95.7% standard Purina chow + 3% lard oil + 0.5% cholesterol) (Group II), HCD diet and 2.5 mg/kg per day acarbose (Group III), or HCD diet and 5.0 mg/kg per day acarbose (Group IV). At the end of the 25 weeks, all rabbits are sacrificed by exsanguination under deep anesthesia with pentobarbital (30 mg/kg i.v.) injected via the marginal ear vein. Serum is stored at −80°C prior to measurement of serum values. The aortic arch and thoracic aortas are carefully removed to protect the endothelial lining, and are collected and freed of adhering soft tissue.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

References:

[1]. Zhang Q, et al. Acarbose Reduces Blood Glucose by Activating miR-10a-5p and miR-664 in Diabetic Rats. PLoS One. 2013 Nov 18;8(11):e79697.
[2]. Chan KC, et al. Pleiotropic effects of acarbose on atherosclerosis development in rabbits are mediated via upregulating AMPK signals. Sci Rep. 2016 Dec 7;6:3864

Background

Acarbose sulfate is an inhibitor of alpha glucosidase, an anti-diabetic drug.

Acarbose (1, 2, and 3 μM) dose- and time-dependently inhibits TNF-α-induced VSMC proliferation and migration. Acarbose (1, 2, and 3 μM) dose-dependently decreases β-galactosidase, Ras expression and increased p-AMPK expression in TNF-α pre-treated A7r5 cells[2].

Acarbose (300 mg/60 kg body weight) decreases the fasting blood glucose, and

regulates the glucose tolerance of DM rats without body weight loss. Acarbose significantly suppresses serum IL6 and TNF-α in DM rats[1]. Acarbose (2.5 and 5.0 mg/kg) significantly and dose-dependently decreases the intensity of neointimal IL-6, TNF-α, and iNOS staining, and significantly increases the intensity of neointimal p-AMPK staining. Acarbose (2.5 and 5.0 mg/kg) significantly and dose-dependently decreases neointimal Ras and β-galactosidase expression in HCD-fed rabbits without body weight loss[2].

References:
[1]. Zhang Q, et al. Acarbose Reduces Blood Glucose by Activating miR-10a-5p and miR-664 in Diabetic Rats. PLoS One. 2013 Nov 18;8(11):e79697.
[2]. Chan KC, et al. Pleiotropic effects of acarbose on atherosclerosis development in rabbits are mediated via upregulating AMPK signals. Sci Rep. 2016 Dec 7;6:3864