Product Data Sheet

Product Name: KU-32
Cat. No.: GC31118

Chemical Properties

Cas. No.	956498-70-7		
SMILES	CC1=C(O2)C(C=C(NC(C)=O)C2=O)=CC=C1O[C@H]3[C@@H]([C@@H]([C@@H](OC)C(C)(C)O3)O)O		
Formula	$C_{20}H_{25}NO_8$	M.Wt	407.41
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	KU-32		

Protocol

Cell experiment:

Islets are placed into 96-well plates and subjected to a 8-point dose of KU-32 in either low (5 mM) or high (17.5 mM) glucose in DMEM：F12 media and incubated overnight at 37°C and 5% CO2. Twenty-four hours later, alamarBlue is added directly to each well to achieve a final concentration of 10% alamarBlue. Readings on a microplate reader are collected 4, 24, and 48 hours later[1].

Animal experiment:

Male and female lepr mice are used. At 10 weeks of age, animals are given once per week intraperitoneal injection of 5% Captisol or 20 mg/kg KU-32 in 5% Captisol. At termination of the study, blood from each animal is collected[1].

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References:

[1]. Farmer K, et al. KU-32, a novel drug for diabetic neuropathy, is safe for human islets and improves in vitro insulin secretion and viability. Exp Diabetes Res. 2012;2012:671673.
[2]. Urban MJ, et al. Inhibiting heat-shock protein 90 reverses sensory hypoalgesia in diabetic mice. ASN Neuro. 2010 Aug 11;2(4):e00040.

Background

KU-32 is a novel, novobiocin-based Hsp90 inhibitor that can protect against neuronal cell death.

Treating human islets with KU-32 for 24 hours shows no toxicity. With a minimum of 2-day exposure, KU-32 improves cellular viability by blocking apoptosis. Functionally, isolated human islets release more glucose-stimulated insulin when preincubate in KU-32[1]. KU-32 protects against glucose-induced death of embryonic DRG (dorsal root ganglia) neurons cultured for 3 days in vitro[2].

Diabetic BKS-db/db mice, a model for type 2 diabetes, administered KU-32 for 10 weeks do not show any significant changes in blood glucose and insulin levels, despite having greater insulin staining/beta cell in the pancreas compared to untreated BKS db/db mice[1].

[1]. Farmer K, et al. KU-32, a novel drug for diabetic neuropathy, is safe for human islets and improves in vitro insulin secretion and viability. Exp Diabetes Res. 2012;2012:671673. [2]. Urban MJ, et al. Inhibiting heat-shock protein 90 reverses sensory hypoalgesia in diabetic mice. ASN Neuro. 2010 Aug 11;2(4):e00040.

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