

RGX-202

Chemical Properties

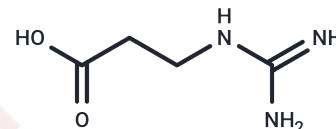
CAS No. : 353-09-3

Formula: C₄H₉N₃O₂

Molecular Weight: 131.13

Appearance: Solid

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year



Biological Description

Description	RGX-202 (β-GPA) is a creatine analog that alters skeletal muscle energy expenditure. It reduces cellular ATP, creatine, and phosphocreatine levels and stimulates AMP-activated protein kinase (AMPK), activating PPARγ coactivator 1α (PGC-1α).
Targets(IC50)	Apoptosis,Endogenous Metabolite,AMPK,PPAR
In vitro	3-Guanidinopropionic acid evokes a shift from glycolytic to oxidative metabolism, increased cellular glucose uptake, and increased fatigue tolerance[1]
In vivo	3-Guanidinopropionic Acid(β-GPA) downregulated the expression of the β-oxidation genes.?Administration of β-GPA in mice for 3 weeks improved the animals' physical strength and endurance health, ie, increased their physical strength and endurance and alleviated anxiety.?β-GPA might be considered an adaptogene affecting both the muscle and brain metabolism in mammals[2].
Animal Research	The following animal groups were used for the experiment: (1) mice that were not subjected to injections (n = 10)–this group was used only for physiological tests and were not killed after the experiment;?(2) saline-treated mice (n = 8)–the volume of injections was 200 μL;?and (3) β-GPA-treated mice (n = 8)–concentration of β-GPA was 1 mg/kg/day.?The volume of injections was 200 μL.Injections were performed 3 times a week for 3 weeks.?The mice's weight and the total amount of consumed food and water were measured daily.?Once a week, a string test was performed.?Measurements of the oxygen consumption rates of live animals and the open field test were performed after the course of injections.?After 3 weeks, the mice were killed;?brain dissection was performed to extract the cortex and the ventral midbrain (VMB) for quantitative real-time polymerase chain reaction (qRT-PCR) analysis[2].

Solubility Information

Solubility	DMSO: Slightly soluble, H ₂ O: 50 mg/mL (381.3 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.626 mL	38.1301 mL	76.2602 mL
5 mM	1.5252 mL	7.626 mL	15.252 mL
10 mM	0.7626 mL	3.813 mL	7.626 mL
50 mM	0.1525 mL	0.7626 mL	1.5252 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Oudman I, Clark JF, Brewster LM. The effect of the creatine analogue beta-guanidinopropionic acid on energy metabolism: a systematic review. PLoS One. 2013;8(1):e52879.

Gureev A P , Shaforostova E A , Starkov A A , et al. β -Guanidinopropionic Acid Stimulates Brain Mitochondria Biogenesis and Alters Cognitive Behavior in Nondiseased Mid-Age Mice[J]. Journal of Experimental Neuroscience, 2018, 12:117906951876652.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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