

RGX-202

## Chemical Properties

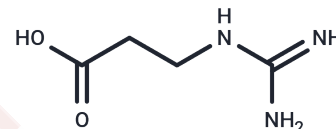
CAS No. : 353-09-3

Formula: C<sub>4</sub>H<sub>9</sub>N<sub>3</sub>O<sub>2</sub>

Molecular Weight: 131.13

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

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	RGX-202 ( $\beta$ -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 PPAR $\gamma$ coactivator 1 $\alpha$ (PGC-1 $\alpha$ ).
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( $\beta$ -GPA) downregulated the expression of the $\beta$ -oxidation genes.?Administration of $\beta$ -GPA in mice for 3 weeks improved the animals' physical strength and endurance health, ie, increased their physical strength and endurance and alleviated anxiety.? $\beta$ -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 $\mu$ L;?and (3) $\beta$ -GPA-treated mice (n = 8)–concentration of $\beta$ -GPA was 1 mg/kg/day.?The volume of injections was 200 $\mu$ L.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 <sub>2</sub> 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

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	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

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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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### 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.  $\beta$ -Guanidinopropionic Acid Stimulates Brain Mitochondria Biogenesis and Alters Cognitive Behavior in Nondiseased Mid-Age Mice[J]. *Journal of Experimental Neuroscience*, 2018, 12:117906951876652.

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