Product Data Sheet

Product Name: ARA290 (Cibinetide)
Cat. No.: GC30776

Chemical Properties

Cas. No.	1208243-50-8		
SMILES	{Glp}-Glu-Gln-Leu-Glu-Arg-Ala-Leu-Asn-Ser-Ser		
Formula	$C_{51}H_{84}N_{16}O_{21}$	M.Wt	1257.31
Solubility	DMSO : ≥ 34 mg/mL (27.04 mM)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C 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			

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Protocol

Animal experiment: Diabetic Goto-Kakizaki (GK) rats, originating from Wistar rats, are bred in our department. Normal Wistar (W) rats are used as nondiabetic controls. All animals are about six weeks old and with body weights 100 to 150 g when treatment is initiated. They are kept at 22°C on a reversed 12-h light-dark cycle with free access to food, except when fasted overnight as noted below. Rats are treated over 4 wks with ARA290 by a once daily subcutaneous (s.c.) injection at a dose of 30 μg/kg body weight or PBS. Blood samples for determination of glucose are taken after a small tail incision and analyzed every week before morning s.c. injection of either ARA290 or placebo. During the experimental period, body weights are measured weekly.

References:

[1]. Hache G, et al. ARA290, a Specific Agonist of Erythropoietin/CD131 Heteroreceptor, Improves Circulating Endothelial Progenitors' Angiogenic Potential and Homing Ability. Shock. 2016 Oct;46(4):390-7
[2]. Carole Muller, et al. ARA290 Improves Insulin Release and Glucose Tolerance in Type 2 Diabetic Goto-Kakizaki Rats. Mol Med. 2015; 21(1): 969–978
[3]. Chen H, et al. Therapeutic effects of nonerythropoietic erythropoietin analog ARA290 in experimental autoimmune encephalomyelitis rat. J Neuroimmunol. 2014 Mar 15;268(1-2):64-70

Background

ARA290 is an EPO-derivative, acting as a specific agonist of erythropoietin/CD131 heteroreceptor, and used for neurological disease treatment.

ARA290 enhances the proliferation, migration, and resistance to H2O2-induced apoptosis of endothelial colony-forming cells (ECFCs)[1]. ARA290 is an EPO-analog peptide without hematopoietic side-effects but may have neurotrophic and antidepressant effects[2].

After ECFC transplantation to mice with CLI, a single ARA290 injection enhances the ischemic/non-ischemic ratio of hindlimb blood flow and capillary density after 28 days and the homing of radiolabeled transplanted cells to the ischemic leg 4 h after transplantation[1]. ARA290 (30 μg/kg,

s.c.) prevents progressive worsening of glucose control without affecting body weight of rats. ARA290 significantly decreases glucose AUCs in IPGTT in GK rats[2]. Low-dosage ARA290 (35 μg/kg, i.p.) treatment only slightly attenuates the EAE severity in rats. ARA290-treating group (70 μg/kg, i.p.) significantly delays the onset, decreases the neurologic severity and shortens the duration of EAE in a dose-dependent way[3].

[1]. Hache G, et al. ARA290, a Specific Agonist of Erythropoietin/CD131 Heteroreceptor, Improves Circulating Endothelial Progenitors' Angiogenic Potential and Homing Ability. Shock. 2016 Oct;46(4):390-7 [2]. Carole Muller, et al. ARA290 Improves Insulin Release and Glucose Tolerance in Type 2 Diabetic Goto-Kakizaki Rats. Mol Med. 2015; 21(1): 969-978 [3]. Chen H, et al. Therapeutic effects of nonerythropoietic erythropoietin analog ARA290 in experimental autoimmune encephalomyelitis rat. J Neuroimmunol. 2014 Mar 15;268(1-2):64-70