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产品名称：Noopept
产品别名：Omberacetam；GVS-111; SGS-111

生物活性：

Description	Omberacetam (GVS-111) is a medication promoted and prescribed in Russia and neighbouring countries as a nootropic.
In Vitro	Nooglutil exhibits pharmacologically significant competition with a selective agonist of AMPA receptors ([G-3H]Ro 48-8587) for the receptor binding sites (with IC50 = 6.4 +/- 0.2 microM), while the competition of noopept for these receptor binding sites was lower by an order of magnitude (IC50 = 80 +/- 5.6 microM) [1]. GVS-111 significantly increased neuronal survival after H(2)O(2)-treatment displaying a dose-dependent neuroprotective activity from 10 nM to 100 microM, and an IC(50) value of 1.21+/-0.07 microM. GVS-111 inhibited the accumulation of intracellular free radicals and lipid peroxidation damage in neurons treated with H(2)O(2) or FeSO(4), suggesting an antioxidant mechanism of action [2].
In Vivo	N-Phenylacetyl-L-prolylglycine ethyl ester (GVS-111) administered intravenously at a dose of 0.5 mg/kg/day, for the first time 1 h after ischaemic lesion and then for 9 post-operative days, with the last administration 15 min before testing, attenuated the deficit [3]. GVS-111 itself was not found in rat brain 1 h after 5 mg/kg i.p. administration up to limit of detection (LOD) under high performance liquid chromatography (HPLC) conditions [4]. The most pronounced antiinflammatory effect of dipeptide was observed on the model of adjuvant arthritis in rats, where the drug administered over 25 days in a daily dose of 0.5 mg/kg (i.m.) or 5 mg/kg (p.o.) significantly reduced the chronic immune inflammation (on the 12th day, by 94.0 and 74.1%, respectively) [5].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 100 mg/mL (314.10 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1410 mL	15.7050 mL	31.4100 mL
	5 mM	0.6282 mL	3.1410 mL	6.2820 mL
	10 mM	0.3141 mL	1.5705 mL	3.1410 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: ≥ 2.5 mg/mL (7.85 mM); Clear solution

	此方案可获得 ≥ 2.5 mg/mL (7.85 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。 2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (7.85 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (7.85 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (7.85 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (7.85 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Firstova Iulu, et al. Studying specific effects of nootropic drugs on glutamate receptors in the rat brain. Eksp Klin Farmakol. 2011;74(1):6-10. [2]. Pelsman A, et al. GVS-111 prevents oxidative damage and apoptosis in normal and Down's syndrome human cortical neurons. Int J Dev Neurosci. 2003 May;21(3):117-24. [3]. Ostrovskaya RU, et al. Memory restoring and neuroprotective effects of the proline-containing dipeptide, GVS-111, in a photochemical stroke model. Behav Pharmacol. 1999 Sep;10(5):549-53. [4]. Gudasheva TA, et al. The major metabolite of dipeptide piracetam analogue GVS-111 in rat brain and its similarity to endogenous neuropeptide cyclo-L-prolylglycine. Eur J Drug Metab Pharmacokinet. 1997 Jul-Sep;22(3):245-52. [5]. Kovalenko LP, et al. Anti-inflammatory properties of noopept (dipeptide nootropic agent GVS-111). Eksp Klin Farmakol. 2002 Mar-Apr;65(2):53-5. [6]. Kovalenko LP, et al. Preclinical study of noopept toxicity. Eksp Klin Farmakol. 2002 Jan-Feb;65(1):62-4.