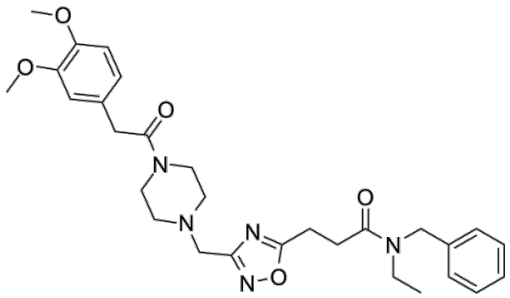
Product Data Sheet

Product Name: E0199
Cat. No.: GC79544

Chemical Properties

Cas. No.	931928-13-1		
Formula	$C_{29}H_{37}N_5O_5$	M.Wt	535.63
Solubility	DMSO: 50 mg/mL (93.35 mM; Need ultrasonic)	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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Background

E0199 is a novel potent dual-target K V 7/Na V modulator that activates the K V 7 channel (K V 7.2/7.3 (EC 50 = 12.78 nM), K V 7.2 (EC 50 = 0.50 μM), and K V 7.5 (EC 50 = 27.14 nM) channels) while simultaneously blocks the Na V 1.7 (IC_{50} = 0.52 μM), Na V 1.8 (IC_{50} = 0.24 μM), and Na V 1.9 (IC_{50} = 0.16 μM) channels. E0199 shows a potent analgesic effect without affecting heart and skeletal muscle ion channels critically in a chronic constriction injury (CCI) mouse model. E0199 can be used for Neuropathic pain (NP) research [1].

In Vivo, E0199 (1, 5, and 20 mg/kg, i.p., daily from day 11 to 30 after the induction of CCI) significantly alleviates thermal, mechanical, and cold hypersensitivity, enhances central open field movement, and improves exploratory behavior in the elevated plus maze in CCI mice[1].

In Vitro, E0199 (0.1-10 μM) influences the inactivation process of the NaV1.7, NaV1.8, and NaV1.9 channels, facilitating channel inactivation and impacting the extent of the shift of the inactive curve in the sequence: NaV1.8 > NaV1.9 > NaV1.7[1]. E0199 (0.03-10 μM) activates KV7.2-KV7.5 channels, moving their activation curve towards the hyperpolarisation direction and opening KV7 channels, demonstrating a rank order of potency of KV7.2/7.3 > KV7.2 > KV7.5 > KV7.4[1]. E0199 (1-10 μM) significantly influences action potential (AP) firing parameters in the CCI model rat Dorsal Root Ganglion (DRG) neurons in a dose-dependent manner, affecting the threshold, rheobase, amplitude, and Resting Membrane Potential (RMP)[1].

References:
[1]. Zhang B, et al. Discovery of E0199: A novel compound targeting both peripheral NaV and KV7 channels to alleviate neuropathic pain. J Pharm Anal. 2025 Jan;15(1):101132.

Caution: Product has not been fully validated for medical applications. For research use only.
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