Guangxitoxin 1E

Cat. No.:	HY-P1427
CAS No.:	1233152-82-3
Molecular Formula:	$C_{178}H_{248}N_{44}O_{45}S_7$
Molecular Weight:	3948.61
Sequence Shortening:	EGECGGFWWKCGSGKPACCPKYVCSPKWGLCNFPMP(Disulfide bridge:Cys4-Cys19;Cys11-Cys24;Cys18-Cys31)
Target:	Potassium Channel
Pathway:	Membrane Transporter/Ion Channel
Storage:	Sealed storage, away from moisture Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

BIOLOGICAL ACTIVITY

Description	Guangxitoxin 1E is a potent and selective blocker of $K_V2.1$ and $K_V2.2$ channels. Guangxitoxin 1E inhibits K_V2 with an IC_{50} of 1-3 nM. K_V2 channels underlie delayed-rectifier potassium currents in various neurons[1][2].
IC_{50} & Target	IC50: 1-3 nM (K_V2 channels); 24-54 nM ($K_V4.3$ channels)[2]
In Vitro	Guangxitoxin 1E inhibits K_V2 with an IC_{50} of 1-3 nM but has no significant effect on $K_V1.2$, $K_V1.3$, $K_V1.5$, $K_V3.2$ and BK potassium channels, nor on calcium and sodium channels $Ca_V1.2$, $Ca_V2.2$, $Na_V1.5$, $Na_V1.7$, $Na_V1.8$, whereas the IC_{50} for $K_V4.3$ channels is 24-54 nM[2]. In mouse β-cells, Guangxitoxin 1E inhibits 90% of I_{DR} and, as for $K_V2.1$, shifts the voltage dependence of channel activation to more depolarized potentials, a characteristic of gating-modifier peptides. Guangxitoxin 1E broadens theβ-cell action potential, enhances glucose-stimulated intracellular calcium oscillations, and enhances insulin secretion from mouse pancreatic islets in a glucose-dependent manner[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Hönigsperger C, et al. Physiological roles of Kv2 channels in entorhinal cortex layer II stellate cells revealed by Guangxitoxin-1E. J Physiol. 2017 Feb 1;595(3):739-757.

[2]. Herrington J, et al. Blockers of the delayed-rectifier potassium current in pancreatic beta-cells enhance glucose-dependent insulin secretion. Diabetes. 2006 Apr;55(4):1034-42.

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