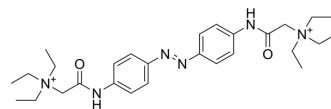


QAQ

Cat. No.:	HY-110358A
CAS No.:	1204416-85-2
Molecular Formula:	C ₂₈ H ₄₄ N ₆ O ₂ ²⁺
Molecular Weight:	496.69
Target:	Sodium Channel
Pathway:	Membrane Transporter/Ion Channel
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	QAQ dichloride dichloride, a photoswitchable voltage-gated Na _v and K _v channels blocker, blocks channels in its trans form (of the azobenzene photoswitch), but not in its cis form. QAQ dichloride dichloride is membrane-impermeant and only infiltrates pain-sensing neurons that express endogenous import channels. QAQ dichloride dichloride acts as a light-sensitive analgesic and can be used for studying of signaling mechanisms in acute and chronic pain ^{[1][2]} .
IC₅₀ & Target	Target: voltage-gated Na _v and K _v channels
In Vitro	<p>QAQ dichloride dichloride (100 μM) does not cross the membrane and can be injected into cells through a micropipette to photosensitize a single cell and afford subcellular control of action potential propagation. It blocks Shaker-IR current in the trans configuration and unblocks it in the cis configuration^[1].</p> <p>QAQ dichloride dichloride can be used to develop red-shifted derivatives of QAQ dichloride, powerful doubly charged photochromic blockers. These derivatives allow for remote control of K_v and Na_v channel conductance with light and offer the opportunity to silence neuronal activity reversibly^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [1]. Timm Fehrentz, et al. Exploring the Pharmacology and Action Spectra of Photochromic Open-Channel Blockers. *Chembiochem*. 2012 Aug 13;13(12):1746-9.
- [2]. Alexandre Mourot, et al. Photochromic Potassium Channel Blockers: Design and Electrophysiological Characterization. *Methods Mol Biol*. 2013;995:89-105.

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

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