

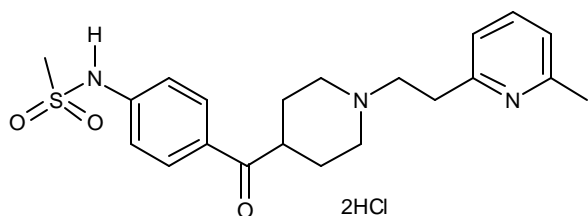
Product Information

E-4031

Catalog Number **M5060**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

CAS RN 113559-13-0

Synonym: N-[4-[[1-[2-(6-Methyl-2-pyridinyl)ethyl]-4-piperidinyl]carbonyl]phenyl]methanesulfonamide dihydrochloride



Product Description

Molecular Formula: $\text{C}_{21}\text{H}_{27}\text{N}_3\text{O}_3\text{S} \times 2\text{HCl}$
Molecular Weight: 474.44

The human ether-à-go-go gene (*HERG*) encodes a K^+ channel that is essential for normal action potential repolarization in cardiac myocytes. *HERG* encodes the pore-forming α subunit of the rapid component of the delayed rectifier K^+ channel, $I_{\text{K}(\text{Vr})}$.¹ *HERG* K^+ channels are composed of six transmembrane domains (S1-S6). Typical of voltage-gated K^+ channels, domain S4 contains multiple positive charges.² *HERG* K^+ channels exhibit strong inward rectification due to rapid voltage-dependent inactivation, a feature unique among mammalian voltage-gated K^+ channels.³ Additionally, *HERG* K^+ channels are slow to deactivate, remaining open for tens of milliseconds following repolarization of the action potential.

E-4031 is a methanesulfonamide class III antiarrhythmic agent. Sub-micromolar concentrations of E-4031 selectively block *HERG* K^+ channels in heterologous systems,^{4,5} cardiac cells,⁶ and cardiac preparations.⁷

Preparation Instructions

Soluble in water and most aqueous buffers.

Storage/Stability

Store the product tightly sealed at room temperature for 2–3 weeks or at $-20\text{ }^{\circ}\text{C}$ for long-term storage.

Store solutions at $-20\text{ }^{\circ}\text{C}$ for up to six months.

References

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3. Smith, P.L. et al., *Nature*, **379**, 833-836 (1996).
4. Spector, P.S. et al., *Circ. Res.*, **78**, 499-503 (1996).
5. Zhou, Z. et al., *Biophys. J.*, **74**, 230-241 (1998).
6. Sanguinetti, M.C., and Jurkiewicz, N.K., *J. Gen. Physiol.*, **96**, 195-215 (1990).
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JWM,RYC,MCT,MAM 02/07-1

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