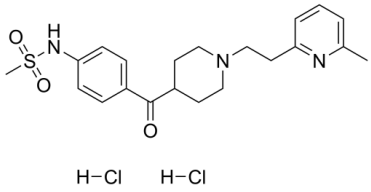
Data Sheet

Product Name:	E-4031
Cat. No.:	CS-3721
CAS No.:	113559-13-0
Molecular Formula:	$C_{21}H_{29}Cl_2N_3O_3S$
Molecular Weight:	474.44
Target:	Potassium Channel
Pathway:	Membrane Transporter/Ion Channel
Solubility:	H2O : ≥ 50 mg/mL (105.39 mM)



BIOLOGICAL ACTIVITY:

E-4031 is a selective **hERG** potassium channel blocker for use in class III anti-arrhythmic studies[1]. ***In Vitro:*** E-4031 (0.1-10 μM) significantly depolarises the maximum diastolic potential (MDP) and prolongs the action charge that depolarises MDP from -58.8+0.9 to -24.5±1.8 mV at 1 μM and from -58.2±2.1 to -19.6±1.8 mV at 10 μM in single SAN cells of New Zealand albinc rabbits[2].
E-4031 (0.1-10 μM) can block part of the outward current during the depolarisation step as well as the tail current (I_{TD}) during subsequent repolarization in a dose-dependent manner, and depresses I_{TD} by 88 % at 10 μM in single SAN cells of New Zealand albinc rabbits[2].
In Vivo: E-4031 (i.v., 50 μg/kg) reduces the net outward current of ventricular myocytes, prolongs the QT interval and activation-recovery interval (ARI) in all left ventricular (LV) layers, and increases transmural ARI dispersion in beagles[1].

References:

[1]. Daisuke Izumi, et al. Effects of bepridil versus E-4031 on transmural ventricular repolarization and inducibility of ventricular tachyarrhythmias in the dog. Pacing Clin Electrophysiol. 2010 Aug;33(8):950-9.

[2]. E E Verheijck, et al. Effects of delayed rectifier current blockade by E-4031 on impulse generation in single sinoatrial nodal myocytes of the rabbit. Circ Res. 1995 Apr;76(4):607-15.

CAIndexNames:

Methanesulfonamide, N-[4-[[1-[2-(6-methyl-2-pyridinyl)ethyl]-4-piperidinyl]carbonyl]phenyl]-, hydrochloride (1:2)

SMILES:

CS(=O)(NC1=CC=C(C(C2CCN(CCC3=NC(C)=CC=C3)CC2)=O)C=C1)=O.[H]Cl.[H]Cl

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