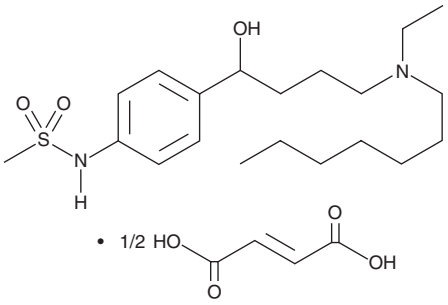
PRODUCT INFORMATION

(±)-Ibutilide (hemifumarate)

Item No. 15011

CAS Registry No.:	122647-32-9
Formal Name:	N-[4-[4-(ethylheptylamino)-1-hydroxybutyl] phenyl]-methanesulfonamide, 2E-butenedioate (2:1)
Synonym:	U-70226E
MF:	$C_{20}H_{36}N_2O_3S \bullet 1/2C_4H_4O_4$
FW:	442.6
Purity:	≥98%
UV/Vis.:	λ_{max}: 229 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(±)-Ibutilide (hemifumarate) is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-ibutilide (hemifumarate) in the solvent of choice, which should be purged with an inert gas. (±)-Ibutilide (hemifumarate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (±)-ibutilide (hemifumarate) in ethanol is approximately 5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (±)-ibutilide (hemifumarate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (±)-ibutilide (hemifumarate) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-Ibutilide is a class III antiarrhythmic agent.[1] It inhibits the rapidly activating delayed-rectifier potassium current (I_{Kr}) in AT-1 myocytes with an IC_{50} value of 20 nM.[2] (±)-Ibutilide also enhances the late inward sodium current (I_{Na}) and increases the action potential duration in isolated guinea pig ventricular cells.[3] It decreases ventricular fibrillation induced by the ATP-dependent potassium channel activator pinacidil (Item No. 15416) in Langendorff isolated perfused rabbit hearts when used at concentrations ranging from 3 to 30 µM.[4] (±)-Ibutilide (15 µg/kg, i.v.) increases the effective refractory period (ERP) of the left and right atrium in anesthetized pigs.[5] It prevents rapid pacing-induced atrial flutter in dogs when administered orally at doses ranging from 0.25 to 5 mg/kg. Formulations containing ibutilide have been used in the treatment of atrial arrhythmias.

References

1. Tamargo, J., Caballero, R., Gómez, R., *et al. Cardiovasc. Res.* **62(1)**, 9-33 (2004).
2. Yang, T., Snyders, D.J., and Roden, D.M. Circulation **91(6)**, 1799-1806 (1995).
3. Lee, K.S. *J. Pharm. Exp. Ther.* **262(1)**, 99-108 (1992).
4. Friedrichs, G.S., Chi, L., Black, S.C., *et al. J. Pharm. Exp. Ther.* **266(3)**, 1348-1354.
5. Knobloch, K., Brendel, J., Peukert, S., *et al. Naunyn Schmiedebergs Arch Pharmacol.* **366(5)**, 482-487.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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