**PRODUCT INFORMATION**

**XE 991 (hydrochloride)**

*Item No. 14582*

---

**CAS Registry No.:** 122955-13-9  
**Formal Name:** 10,10-bis(4-pyridinylmethyl)-9(10H)-anthracenone, dihydrochloride  
**MF:** C_{26}H_{20}N_{2}O • 2HCl  
**FW:** 449.4  
**Purity:** ≥99%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid  
**UV/Vis.:** λ_{max} 258 nm

---

**Laboratory Procedures**

For long term storage, we suggest that XE 991 (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years. XE 991 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the XE 991 (hydrochloride) in the solvent of choice. XE 991 (hydrochloride) is soluble in DMSO, which should be purged with an inert gas. The solubility of XE 991 (hydrochloride) in DMSO is approximately 2 mg/ml. XE 991 (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, XE 991 (hydrochloride) should first be dissolved in dimethyl formamide (DMF) and then diluted with the aqueous buffer of choice. XE 991 (hydrochloride) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

**Description**

The KCNQ potassium channels are neuronal modulators which combine with other KQT or KCNE channels to form heteromultimers. XE 991 is a blocker of KCNQ channels that potently inhibits KCNQ1 and 2 homomeric channels (IC_{50} = 0.75 and 0.71 µM, respectively) as well as KCNQ2+3 heteromultimers (IC_{50} = 0.6 µM).\(^1\) It much less effectively blocks eag, erg, and elk channels. The effectiveness of XE 991 against KCNQ channels depends on partners or accessory proteins.\(^2\) Through these actions, XE 991 enhances acetylcholine release from rat brain slices (EC_{50} = 490 nM) and shows good in vivo potency and duration of action, suggesting utility in Alzheimer’s disease therapeutics.\(^3\) While early studies focused on actions in the central nervous system, XE 991 can be used to explore the roles of KCNQ channels in neuronal regulation throughout the body.\(^4\)

**References**