**Chelerythrine Chloride**

**5 mg**

**Background:** Chelerythrine is a benzophenanthridine alkaloid that elicits a wide range of biological responses. It was initially reported to be a potent PKC inhibitor (IC$_{50}$ = 660 nM) through interaction with the catalytic domain, competitive with respect to the phosphate acceptor, noncompetitive with respect to ATP (1), and is often used in research as a means to inhibit PKC activation (2-4). However, subsequent studies have shown that chelerythrine is not a potent PKC inhibitor and its effects are independent of PKC inhibition (5,6). Researchers have demonstrated that chelerythrine activates JNK and p38 through an oxidative stress mechanism (6), inhibits Bcl-xL by preventing Bcl-xL-Bak BH3 peptide binding (IC$_{50}$ = 1.5 μM) and disrupting the interaction between Bcl-xL and Bax (7), and induces apoptosis (6-8).

**Molecular Formula:** C$_{21}$H$_{18}$NO$_4$CI

**Molecular Weight:** 383.82 g/mol

**Solubility:** Soluble in DMSO at 5 mg/ml; very poorly soluble in ethanol and water with maximum solubility in water ~10-50 μM.

**Purity:** >99%

**Directions for Use:** Chelerythrine Chloride is supplied as a lyophilized powder. For a 10 mM stock, reconstitute the 5 mg in 1.30 ml DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 1-20 μM either as a pretreatment for 15 min-1 hr prior to treating with a stimulator or used alone with varying treatment times lasting up to 24 hr.

**Storage:** Store lyophilized or in solution at -20°C, desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

**Background References:**