Product Data Sheet

Chemical Properties

Product Name: Dequalinium Chloride
Cas No.: 522-51-0
M.Wt: 527.57
Formula: C30H40N4.2Cl

Chemical Name: 1-[10-(4-amino-2-methylquinolin-1-ium-1-yl)decyl]-2-methylquinolin-1-ium-4-amine;dichloride
Canonical SMILES: CC1=[N+]C2=CC=CC=C2C(=C1)N)CCCCCCCCCCCCCCCCC[C]=C=C(C=C(C4=CC=CC=C43)N)C.
Solubility: <5.28 mg/mL in DMSO, <2.64 mg/mL in ETOH, <2.61 mg/mL in H2O
Storage: Store at -20°C
General tips: For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Shopping Condition: Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

Targets: TGF-β / Smad Signaling
Pathways: PKC
Description: Dequalinium Chloride (DECA) is a PKC inhibitor with IC50 of 7-18 μM, and also a selective blocker of apamin-sensitive K+ channels with IC50 of 1.1 μM [1][3].
Protein kinase C (PKC) is a monomeric Ca²⁺- and phospholipid-dependent Ser/Thr protein kinases, it plays a critical role in growth factor-activated signaling and malignant transformation [1].

DECA is an anti-tumor agent and PKC inhibitor. It is selectively accumulated and retained within the mitochondria of carcinoma cells where it blocked mitochondrial enzymes which can then disrupt cellular energy production, eventually resulting in cell death [2]. Dequalinium is a potent inhibitor of apamin-sensitive K⁺ channels in hepatocytes and of nicotinic responses in skeletal muscle. Dequalinium blocked angiotensin II-evoked K⁺ loss with an IC50 value of 1.5 μM and also inhibited 125I-monoiodoapamin binding with Ki of 1.1 μM [3].

DECA, as a mitochondrial poison, is an agent with capable of potentiating the effects of tumor necrosis factor against ovarian cancer cell lines. DECA treatment can prolong animal survival in mice bearing the PA-1 intraperitoneal ovarian carcinoma xenograft. Single agent DECA increased animal survival by 37% whereas human TNF increased survival by 12% in those animals treated 3 days post tumor injection. DECA/TNF enhanced animal survival by 45% in treated animals [4].

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.