

Product Data Sheet

Product Name: Dequalinium Chloride

Cat. No.: GC16354

Chemical Properties

Cas. No. 522-51-0

Chemical Name 1-[10-(4-amino-2-methylquinolin-1-ium-1-yl)decyl]-2-methylquinolin-1-ium-4-amine;dichloride

SMILES CC1=[N+]([CH-]1)CCCCCCCCC[N+]3=C(C=C(C4=CC=CC=C4N)C.[Cl-].[Cl-])

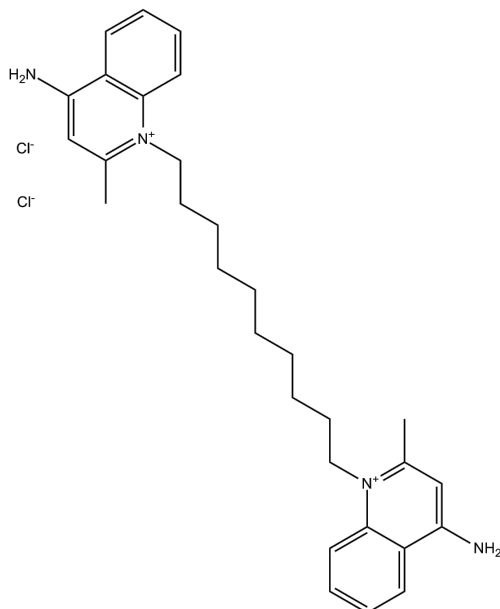
Formula $C_{30}H_{40}N_4 \cdot 2Cl$ M.Wt 527.57

Solubility <5.28 mg/mL in DMSO 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.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Dequalinium Chloride (DECA) is a PKC inhibitor with IC₅₀ of 7-18 μ M, and also a selective blocker of apamin-sensitive K⁺ channels with IC₅₀ of 1.1 μ M [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 μ M and also inhibited ¹²⁵I - monoiodoapamin binding with K_i of 1.1 μ M [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].

References:

[1]. Rotenberg SA, Sun XG. Photoinduced inactivation of protein kinase C by dequalinium identifies the RACK-1-binding domain as a recognition site. *J Biol Chem*, 1998, 273(4): 2390-2395.

[2]. Manetta A, Emma D, Gamboa G, et al. Failure to enhance the *in vivo* killing of human ovarian carcinoma by sequential treatment with dequalinium chloride and tumor necrosis factor. *Gynecol Oncol*, 1993, 50(1): 38-44.

[3]. Castle NA, Haylett DG, Morgan JM, et al. Dequalinium: a potent inhibitor of apamin-sensitive K⁺ channels in hepatocytes and of nicotinic responses in skeletal muscle. *Eur J Pharmacol*, 1993, 236(2): 201-207.

[4]. Manetta A, Emma D, Fuchtnner C, et al. Effect of recombinant human tumor-necrosis-factor-alpha and dequalinium chloride on human ovarian-cancer cell-lines *in-vitro*. *Int J Oncol*, 1993, 3(1): 127-33.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA