

Product Data Sheet

Product Name: FA16
Cat. No.: GC91783

Chemical Properties

Cas. No. N/A

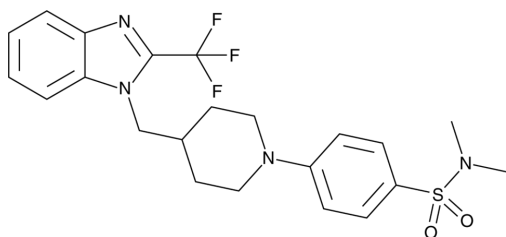
Formula $C_{22}H_{25}F_3N_4O_2S$ M.Wt 466.5

Solubility DMSO: Slightly soluble: 0.1-1 mg/ml, Ethanol: Slightly soluble: 0.1-1 mg/ml, PBS (pH 7.2): Slightly soluble: 0.1-1 mg/ml
Storage $-20^{\circ}C$

General tips For obtaining a higher solubility, please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ 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

FA16 is a ferroptosis inducer and an inhibitor of the system x_c^- cystine/glutamate transporter.^[1] It reduces the viability of various cancer cell lines, including HT-1080 fibrosarcoma and A375 melanoma cells (IC_{50} s = 1.26 and 2.31 μM , respectively), 786-O renal cell carcinoma cells (IC_{50} = 0.7 μM), and MDA-MB-231 breast cancer cells (IC_{50} = 4.34 μM) but not several non-cancer cell lines at 20 μM . FA16-induced death of HT-1080 cells can be blocked by the ferroptosis inhibitors ferrostatin-1, Trolox, and deferoxamine (DFO;) and potentiated by ferric ammonium citrate or ferric citrate. FA16-induced death of HT-1080 cells can also be blocked by β -mercaptoethanol, which prevents cell death induced by system x_c^- cystine/glutamate transporter inhibition by increasing intracellular cystine bioavailability. FA16 (5 μM) increases the production of reactive oxygen species

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

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(ROS) in HT-1080 cells, an effect that can be blocked by ferrostatin-1, and inhibits glutamate release from HT-1080 cells in an enzyme-coupled glutamate release assay. FA16 (15 and 30 mg/kg) reduces tumor growth and increases intratumoral levels of 4-hydroxy nonenal (4-HNE;) and malondialdehyde (MDA), markers of lipid peroxidation, in a HepG2 mouse xenograft model. It also has an increased half-life and slower clearance than the ferroptosis inducer erastin in human and rat liver microsomes.

References:

[1].Fang, Y., Tan, Q., Zhou, H., et al.Discovery and optimization of 2-(trifluoromethyl)benzimidazole derivatives as novel ferroptosis inducers in vitro and in vivoEur. J. Med. Chem.245(Pt 1)114905(2023).

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