

Product Data Sheet

Product Name: EC-17 disodium salt
Cat. No.: GC34017

Chemical Properties

Cas. No. 910661-33-5
SMILES S=C(NCCNC(CC[C@@H](C(O)=O)NC(C1=CC=C(NCC2=CN=C3N=C(N)NC(C3=N2)=O)C=C1)=O)=O)NC4=CC5=C(C6(C7=C(OC8=C6C=CC(O)=C8)C=C(O)C=[Na+])
Formula $C_{42}H_{36}N_{10}NaO_{10}S+$ M.Wt 895.85
Solubility Soluble in DMSO Storage Store at -20°C
General 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 tips 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

Protocol

Cell experiment:

KB, HeLa, and TC1 cells are plated on a cell culture treated 6-well plate and incubated for 16 hours. Once confluent, EC-17 is added cells. The cells are incubated and sealed in a light-protected environment for 45 minutes. Cells are then washed 3 times with PBS and plated and underwent fluorescence microscopy[1].

Animal experiment:

Mice[1] Mice are injected subcutaneously in the flank with 1.2×10^6 TC1 cells (C57BL/6 mice), 1.0×10^6 HeLa cells (NOD.Cg-Prkdcscid Il2rgtm1Wjl/Sz) mice, or 1.0×10^6 KB cells (NOD.Cg-Prkdcscid, Il2rgtm1Wjl/Sz) mice). Once tumor volume reached approximately 300 mm³ half of the mice are injected with 0.1 mg/kg of EC-17 and the other half with 0.1 mg/kg of OTL38 via tail vein. Three hours later, the fluorescence of tumors is measured using Flocam[1].

References:

[1]. Tummers QR, et al. Intraoperative imaging of folate receptor alpha positive ovarian and breast cancer using the tumor specific agent EC17. Oncotarget. 2016 May 31;7(22):32144-55.

Background

EC-17 (disodium salt) is a folate receptor alpha (FR α) targeting contrast agent with fluorescent properties in the visible light spectrum. The peak excitation and emission wavelengths of EC-17 are 470/520 nm.

EC-17 contains the fluorescein fluorochrome and has a spectral wavelength of 490-530 nm. EC-17 is synthesized by a folate (vitamin B9) and fluorescein isothiocyanate (FITC) conjugated through an ethylenediamine spacer to produce folate-FITC, with a molecular weight of 917 kDa. FITC is a derivative of fluorescein functionalized with an isothiocyanate reactive group. The folate-FITC conjugate forms a negatively charged fluorescent molecule that specifically targets cell-surface FR α and is subsequently internalized into the cytoplasm. The signal-to-background ratio (SBR) of EC-17 for HeLa cells range from 0.97 to 7.32 depending on the molarity and concentration of cancer cells[1].

The mean fluorescence signal from the animals injected with EC-17 to be $42,234 \pm 12,234$ au[1]. Fluorescence microscopy for folate-FITC shows a strong signal in all malignant tumors with FR- α expression and no signal in FR- α -negative malignant or benign lesions[2].

[1]. Tummers QR, et al. Intraoperative imaging of folate receptor alpha positive ovarian and breast cancer using the tumor specific agent EC17. Oncotarget. 2016 May 31;7(22):32144-55.

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

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