For Research Use Only

TPEN

www.ptgcn.com

Catalog Number: CM00554

产品信息

Catalog Number:
CM00554

CAS号:
16858-02-9

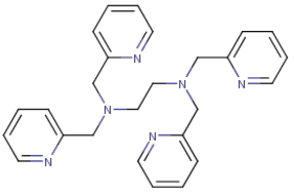
分子式:
$C_{26}H_{28}N_6$

主要靶点:
Reactive Oxygen Species|Apoptosis|Autophagy

主要通路:
凋亡|NF-κB 信号通路|代谢|免疫与炎症|自噬

分子量:
424.54

溶解度:
DMSO:6 mg/mL (14.13 mM)



体外活性

TPEN通过降低镉、汞和甲基汞引起的Fura-2荧光变化而表现出其效应。特别是在添加镉氯化物（10/30 μM）激发的细胞中，TPEN在暴露后3小时加入可以显著降低提升的Fura-2荧光比率至基础水平，在10分钟内降低至119.6±2.4%或109±1.5%（Δ比率(F340/F380)的降低）。此外，TPEN通过铜的氧化还原循环针对结肠癌细胞，依赖于剂量和时间减少细胞活性。TPEN引发的细胞死亡也依赖于铜的氧化还原循环，因为铜螯合剂neocuproine抑制了DNA损伤，并降低了pChk1、γ-H2AX和ATM蛋白表达。

细胞实验

TPEN is dissolved in DMSO and then diluted with appropriate medium[1]. Human neuroblastoma cell line SH-SY5Y, are grown in Dulbecco's Modified Eagle's Medium (DMEM) mixed 1:1 with Ham's F-12 nutrient mixture containing 10% fetal bovine serum, 100 unit/mL penicillin and 100 μg/mL streptomycin at 37°C in a humidified 5% CO2 atmosphere. Two days before experimentation, cells are seeded at a density of 7×104 cells/cm2 in a 96-well plate. Cells in a 96-well plate are serum-starved for 4 hr; calcium indicator fura-2 is then loaded into the cells by using Calcium kit II fura-2. In brief, SH-SY5Ycells are incubated with 5 μM fura-2/AM in the presence of 0.04% Pluronic F-127, a dispersing agent to improve the efficiency of loading with fura-2, and 1.25 mM probenecid, a blocker of organic anion transport to prevent leakage of fura-2 from cells. After 1 hr incubation at 37°C, fura-2 fluorescence is measured at 500 nm emission after excitation at 340 nm (F340) or 380 nm (F380) using an Infinite M200 plate reader at 37°C.The change in [Ca2+]i is reflected by the ratio of F340 and F380. To determine the changes in fura-2 fluorescence ratio induced by heavy metal compounds, cells are treated with manganese chloride, lead acetate, cadmium chloride , mercuric chloride and MeHg chloride dissolved in distilled water. We confirmed that the cells adhered to the bottom of the plate after 6 hr exposure to heavy metal compounds. The cells are also treated with three Ca2+ channel blockers, lanthanum chloride dissolved in distilled water, verapamil and 2-APB dissolved in DMSO, 30 min before heavy metal exposure. The heavy metal chelator TPEN is dissolved in DMSO and added 3 hr after the stimulation with heavy metals to determine the contribution of endogenous and exogenous heavy metals on fura-2 fluorescence changes.We measured the effect of TPEN (20 μM) on the fura-2 fluorescence ratio after a 10 min treatment with TPEN, since our preliminary experiments showed that the effect of TPEN on fura-2 fluorescence reached maximum and stabilized within 10 min of the treatment[1].

储存

Powder: -20°C for 3 years | In solvent: -80°C for 1 year | Shipping with blue ice.