

Product Data Sheet

Product Name: Go 6983
Cat. No.: GC16907

Chemical Properties

Cas. No. 133053-19-7

Chemical Name 3-[1-[3-(dimethylamino)propyl]-5-methoxyindol-3-yl]-4-(1H-indol-3-yl)pyrrole-2,5-dione

SMILES CN(C)CCCN1C=C(C2=C1C=CC(=C2)OC)C3=C(C(=O)NC3=O)C4=CNC5=CC=CC=C54

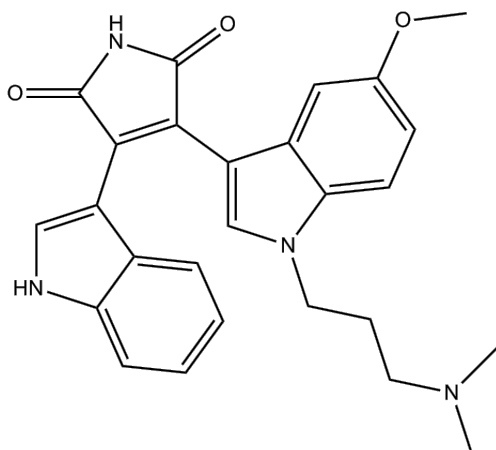
Formula $C_{26}H_{26}N_4O_3$ M.Wt 442.51

Solubility $\geq 22.15\text{mg/mL}$ 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



Protocol

Cell experiment [1]:

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Cell lines	BHK-21 cells
Preparation Method	BHK-21 cells were cultured in DMEM medium, supplemented with 10% fetal bovine serum (FBS), and 1% penicillin/streptomycin at 37°C in an incubator with 5% CO ₂ . Cells were seeded in a 96-well plate at a density of 1×10^4 cells/well overnight. The pBAC-SARS-CoV-2-replicon-luciferase plasmid was transfected into the cells and then incubated for 24 hours in the presence of different concentrations of Go 6983 (0, 1, 5, 10, 20, and 100μM). Subsequently, the cell viability was detected.
Reaction Conditions	0, 1, 5, 10, 20, and 100μM; 24h
Applications	Go 6983 treatment reduced cell viability of BHK-21 cells in a dose-dependent manner.
Animal experiment [2]:	
Animal models	Female p53 ^{-/-} mice
Preparation Method	Female p53 ^{-/-} mice (6 weeks old) were raised in a standard environment, with free access to food and water. 10^6 firefly luciferase expressing DAN cells were injected via the tail vein of mice. One day after the initial injection, mice were injected with either DMSO or 10nmol/kg of Go 6983 (once every day). Mice were assessed weekly for tumor formation up to 28 days using in vivo bioluminescence imaging.
Dosage form	10nmol/kg/day; 28 days; tail vein injection

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Applications	Go 6983 treatment inhibited the tumor burden in the DAN cell-xenograft tumor mouse model.
References: [1] Huang C, Feng F, Shi Y, et al. Protein kinase C inhibitors reduce SARS-CoV-2 replication in cultured cells[J]. Microbiology spectrum, 2022, 10(5): e01056-22. [2] Hu H J, Deng X W, Li R X, et al. Inhibition of protein kinase C activity inhibits osteosarcoma metastasis[J]. Archives of Medical Science, 2019, 15(4): 1028-1034.	

Background

Go 6983 is a pan-PKC inhibitor that acts on PKC α , PKC β , PKC γ , PKC δ , and PKC μ with IC₅₀ values of 7nM, 7nM, 6nM, 10nM, and 20 μ M, respectively^[1]. Go 6983 inhibits titanium particle-induced osteolysis and RANKL-mediated osteoclastogenesis by suppressing the NF κ B/JNK/p38 pathway^[2]. Go 6983 has been widely used for regulating calcium sensitivity and inhibiting the contraction of prostate smooth muscle^[3].

In vitro, Go 6983 significantly inhibits the replication of SARS-CoV-2 virus in Huh7 cells within 24 hours, with an IC₅₀ value of 0.3614 μ M^[4]. 6nM of Go 6983 pretreatment for 30 minutes markedly suppressed the increase in lactate dehydrogenase (LDH) leakage and the decrease in cell survival rate in neuronal cells of BALB/c mice induced by oxygen-glucose deprivation (OGD)^[5]. Treatment with 10 μ M Go 6983 for 24 hours inhibited the migration and invasion of MDA-MB-231 cells^[6].

In vivo, a single intraventricular injection of 5 μ l of Go 6983 (6 μ M) was administered for 6 hours eliminated the neuroprotective effect of hypoxic preconditioning (HPC) on mice under the condition of middle cerebral artery occlusion (MCAO), and aggravated the neurological damage^[7]. Tail vein injection of Go 6983 (10nmol/kg/day) for 28 days inhibited the tumor burden in the DAN cell-xenograft tumor mouse model and prevented lung metastasis^[8].

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- [1] Gschwendt M, Dieterich S, Rennecke J, et al. Inhibition of protein kinase C μ by various inhibitors. Inhibition from protein kinase c isoenzymes[J]. FEBS letters, 1996, 392(2): 77-80.
- [2] Feng W, Li J, Liao S, et al. Gö6983 attenuates titanium particle-induced osteolysis and RANKL mediated osteoclastogenesis through the suppression of NF κ B/JNK/p38 pathways[J]. Biochemical and biophysical research communications, 2018, 503(1): 62-70.
- [3] Huang R, Liu Y, Li B, et al. Inhibition of human prostate smooth muscle contraction by the inhibitors of protein kinase C, GF109203X, and Go6983[J]. The Prostate, 2022, 82(1): 59-77.
- [4] Huang C, Feng F, Shi Y, et al. Protein kinase C inhibitors reduce SARS-CoV-2 replication in cultured cells[J]. Microbiology spectrum, 2022, 10(5): e01056-22.
- [5] Liu Y, Li J, Yang J, et al. Inhibition of PKC γ membrane translocation mediated morphine preconditioning-induced neuroprotection against oxygen–glucose deprivation in the hippocampus slices of mice[J]. Neuroscience letters, 2008, 444(1): 87-91.
- [6] Luan Z, Li J, Huang X, et al. Gö6983 attenuates breast cancer-induced osteolysis by the apoptotic pathway[J]. Cell Biology International, 2020, 44(3): 838-847.
- [7] Zhang N, Yin Y, Han S, et al. Hypoxic preconditioning induced neuroprotection against cerebral ischemic injuries and its cPKC γ -mediated molecular mechanism[J]. Neurochemistry international, 2011, 58(6): 684-692.
- [8] Hu H J, Deng X W, Li R X, et al. Inhibition of protein kinase C activity inhibits osteosarcoma metastasis[J]. Archives of Medical Science, 2019, 15(4): 1028-1034.

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