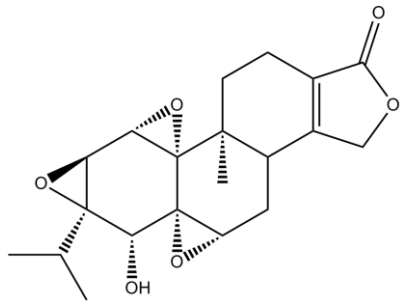
Product Name: Triptolide

Revision Date: 6/30/2016

Product Data Sheet

Chemical Properties



Product Name: Triptolide

Cas No.: 38748-32-2

M.Wt: 360.41

Formula: C20H24O6

Synonyms: PG490 ;PG 490 ;PG-490

Chemical Name: (6aS,7aS,8R,8aR,9aS,9bS,10aS,10bS)-8-hydroxy-8a-isopropyl-10b-methyl-1,5,5b,6,6a,8,8a,9a,9b,10b-decahydrotris(oxireno)[2',3':4b,5;2'',3'':6,7;2''',3''':8a,9]phenanthro[1,2-c]furan-3(2H)-one

Canonical SMILES: CC(C)C12C(O1)C3C4(O3)C5(CCC6=C(C5CC7C4(C2O)O7)COC6=O)C

Solubility: >36mg/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.

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

Biological Activity

Targets : NF-κB

Pathways: Immunology/Inflammation >> NF-κB

Description:

Triptolide is the major bioactive constituent extracted from the Chinese herb Tripterygium wilfordii.
Triptolide inhibit the expression of IL-2 in activated T cells and NF-κB mediated transcription activation [1]. Triptolide also can inhibit colony formation and the proliferation of tumor cells at extremely low concentrations.

Triptolide treatment at the concentration of 15 nM inhibited the invasion and migration of ovarian cancer cells SKOV3 and A2780. Triptolide inhibited MMP7 and MMP19 expression with a dose-dependent manner from 0 to 15 nM in ovarian cancer cells. Triptolide also enhanced expression of the E-cadherin in ovarian cancer cell, then, affected the migration and cell invation.[2] Triptolide triggered a CDK7-mediated degradation of RNAPII, including its robust anticancer properties. Triptolide induced Rpb1 decrease with a dose-dependent manner at lowest 100 nM, resulting to a significant RNAPII reduction in SKOV3 cells.[3] Triptolide caused significant decrease of cell viability in a dose-dependent manner with IC50 value of 74.3 nM in RSF (rheumatoid synovial fibroblasts). Triptolide also has inhibition effect on cell proliferation in RSF with IC50= 20.4 nM. Treatment with triptolide (100 nM) for 24 h caused distinctive morphological changes in synovial cells.[4] Triptolide induces apoptotic death of peripheral T cells and T cell hybridomas by increase of DEVD-cleavable caspases activity at 10-100 ng/ml.[5] Triptolide also inhibited cytokine-induced MMP-3 expression at 125-150nM in primary human synovial fibroblasts, SW1353 cells, and human OA chondro-cytes protecting artilage from aggrecanase- and MMP -driven breakdown.[6]

***Reference**:*

[1]. Qiu D, Zhao G, Aoki Y, Shi L, Uyei A, Nazarian S, Ng JC, Kao PN: Immunosuppressant PG490 (triptolide) inhibits T-cell interleukin-2 expression at the level of purine-box/nuclear factor of activated T-cells and NF-kappaB transcriptional activation. J Biol Chem 1999, 274(19):13443-13450.

[2]. Zhao H, Yang Z, Wang X, Zhang X, Wang M, Wang Y, Mei Q, Wang Z: Triptolide inhibits ovarian cancer cell invasion by repression of matrix metalloproteinase 7 and 19 and upregulation of E-cadherin. Exp Mol Med 2012, 44(11):633-641.

[3]. Manzo SG, Zhou ZL, Wang YQ, Marinello J, He JX, Li YC, Ding J, Capranico G, Miao ZH: Natural product triptolide mediates cancer cell death by triggering CDK7-dependent degradation of RNA polymerase II. Cancer Res 2012, 72(20):5363-5373.

[4]. Kusunoki N, Yamazaki R, Kitasato H, Beppu M, Aoki H, Kawai S: Triptolide, an active compound identified in a traditional Chinese herb, induces apoptosis of rheumatoid synovial fibroblasts. BMC Pharmacol 2004, 4:2.

[5]. Yang Y, Liu Z, Tolosa E, Yang J, Li L: Triptolide induces apoptotic death of T lymphocyte. Immunopharmacology 1998, 40(2):139-149.

[6]. Liacini A, Sylvester J, Zafarullah M: Triptolide suppresses proinflammatory cytokine-induced matrix metalloproteinase and aggrecanase-1 gene expression in chondrocytes. Biochem Biophys Res Commun 2005, 327(1):320-327.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that

required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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