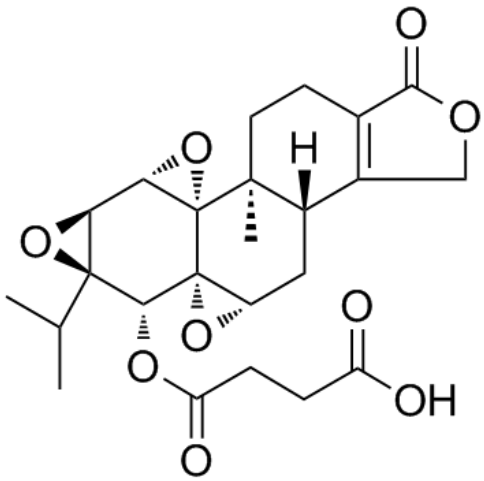
Product Data Sheet

Product Name: Omtriptolide
Cat. No.: GC33857

Chemical Properties

Cas. No.	195883-06-8		
SMILES	C[C@@]([C@@]1([H])C[C@@H]2O3)(CCC4=C1COC4=O)[C@]5([C@H]([C@H]6[C@]7(C(C)C)O6)O5)[C@]23[C@@H]7OC(CCC(O)=O)=O		
Formula	$C_{24}H_{28}O_9$	M.Wt	460.47
Solubility	H_2O : 1.39 mg/mL (3.02 mM; Need ultrasonic)	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



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Protocol

Animal experiment: Mice: Omtriptolide (0.25 mg/kg per day) is started immediately after the transplant and 10 control mice receive intraperitoneal injections of sterile water each day. The mice are then maintained for 28 days until killing, at which time the mice are administered CO2 inhalation, and cervical dislocation is performed. Trachea is divided for histologic staining and immunohistochemistry [2].

References:

[1]. Kim HJ, et al. The water-soluble triptolide derivative PG490-88 protects against cisplatin-induced acute kidney injury. J Pharmacol Exp Ther. 2014 Jun;349(3):518-25.
[2]. Leonard CT, et al. PG490-88, a derivative of triptolide, attenuates obliterative airway disease in a mouse heterotopic tracheal allograft model. J Heart Lung Transplant. 2002 Dec;21(12):1314-8.
[3]. Krishna G, et al. PG490-88, a derivative of triptolide, blocks bleomycin-induced lung fibrosis. Am J Pathol. 2001 Mar;158(3):997-1004.
[4]. Chen BJ, et al. Prevention of graft-versus-host disease by a novel immunosuppressant, PG490-88, through inhibition of alloreactive T cell expansion. Transplantation. 2000 Nov 27;70(10):1442-7.

Background

Omtriptolide (PG490-88) is a water soluble derivative prodrug of triptolide purified from the Chinese herb.

Triptolide, a traditional Chinese medicine, has anti-inflammatory, antiproliferative, and proapoptotic properties[1].

In a mouse model of cisplatin-induced AKI, omtriptolide results in a significant decrease in blood urea nitrogen (BUN), serum creatinine, and acute tubular necrosis (ATN) score, and a nonsignificant increase in tubular apoptosis score in AKI. The protection of omtriptolide against AKI is associated with a decrease in p-ERK and is independent of MKP-1 and proinflammatory cytokines[1]. In a mouse heterotopic tracheal allograft model of obliterative airway disease, omtriptolide attenuates airway obliteration and inhibits accumulation of inflammatory cells, and therefore may have preventive or therapeutic benefits for patients with obliterative airway disease following lung

transplantation[2]. Omtriptolide inhibits fibrosis in the bleomycin group when given the same day or 5 days after bleomycin. Omtriptolide also markedly reduces the number of myofibroblasts in the bleomycin treatment group[3]. Omtriptolide inhibits in vivo both CD4+Vbeta3+ and CD8+Vbeta3+ T cell (alloreactive T cells in this model) expansion in the spleen by 64.09 and 34.02%, respectively, at the time when Vbeta3+ cell expansion is in the logarithmic phase (day 3 after transplantation)[4].

[1]. Kim HJ, et al. The water-soluble triptolide derivative PG490-88 protects against cisplatin-induced acute kidney injury. J Pharmacol Exp Ther. 2014 Jun;349(3):518-25. [2]. Leonard CT, et al. PG490-88, a derivative of triptolide, attenuates obliterative airway disease in a mouse heterotopic tracheal allograft model. J Heart Lung Transplant. 2002 Dec;21(12):1314-8. [3]. Krishna G, et al. PG490-88, a derivative of triptolide, blocks bleomycin-induced lung fibrosis. Am J Pathol. 2001 Mar;158(3):997-1004. [4]. Chen BJ, et al. Prevention of graft-versus-host disease by a novel immunosuppressant, PG490-88, through inhibition of alloreactive T cell expansion. Transplantation. 2000 Nov 27;70(10):1442-7.

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