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**Product Data Sheet**

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Product Name: Psora 4  
Cat. No.: GC16502

**Chemical Properties**

Cas. No. 724709-68-6

Chemical Name 4-(4-phenylbutoxy)-7H-furo[3,2-g]chromen-7-one

SMILES O=C1OC2=C(C=C1)C(OCCCCC3=CC=CC=C3)=C4C(OC=C4)=C2

Formula  $C_{21}H_{18}O_4$  M.Wt 334.37

Solubility  $\geq 15.75\text{mg/mL}$  in DMSO Storage Store at  $-20^\circ\text{C}$

General tips For obtaining a higher solubility, please warm the tube at  $37^\circ\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^\circ\text{C}$  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]:**

Cell lines human and rat TEM cells

Preparation method The solubility of this compound in DMSO is  $>15.75\text{mg/mL}$ . General tips for obtaining a higher concentration: Please warm the tube at  $37^\circ\text{C}$  for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^\circ\text{C}$  for several months.

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

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Reacting condition 0-1000 nM; 30 min

Applications Psora-4 preferentially inhibited the proliferation of human and rat TEM cells with EC50 values of 25 and 60 nM, respectively.

**Animal experiment [2]:**

Animal models rats with anti-glomerular basement membrane glomerulonephritis (anti-GBM GN)

Dosage form 0.3 ml; dissolved in a mixture of 25% CremophorEL and 75% PBS to prepare a concentration of 9 mg/ml; from day 0 to day 21; intraperitoneal injection

Application In rats with anti-glomerular basement membrane glomerulonephritis (anti-GBM GN), Psora 4 significantly reduced urinary protein excretion and the increase in kidney weight was significantly smaller than that in the vehicle group. Psora 4 restored creatinine clearances and reduced the proportion of crescentic glomeruli, and the number of ED-1+ macrophages and CD3+ T cells.

Other notes Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

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### References:

[1] Vennekamp J, Wulff H, Beeton C, Calabresi PA, Grissmer S, Hnsel W, Chandy KG. Kv1.3-blocking 5-phenylalkoxy-psoralens: a new class of immunomodulators. *Mol Pharmacol.* 2004 Jun;65(6):1364-74.

[2]. Hyodo T1, Oda T, Kikuchi Y, et al. Voltage-gated potassium channel Kv1.3 blocker as a potential treatment for rat anti-glomerular basement membrane glomerulonephritis. *Am J Physiol Renal Physiol.* 2010 Dec;299(6):F1258-69.

### Background

EC50: 3 nM

Psora 4 is a Kv1.3 blocker.

The voltage-gated Kv1.3 channel and the Ca<sup>2+</sup>-activated IKCa1 channel has been reported to promote and sustain Ca<sup>2+</sup> signaling in human T cells via providing the driving force for Ca<sup>2+</sup> entry through voltage-independent Ca<sup>2+</sup> channels. Selective blockade of Kv1.3 and/or IKCa1 leads to membrane depolarization, reduced Ca<sup>2+</sup> entry, as well as diminished cytokine proliferation and production.

In vitro: Psora-4 could block Kv1.3 in a dose-dependent manner. Psora-4 was found to be the most potent small-molecule Kv1.3 blocker known. Psora-4 exhibited 17- to 70-fold selectivity for Kv1.3 over Kv1-family channels including Kv1.1, Kv1.2, Kv1.4, and Kv1.7 and also showed no effect on human ether-a-go-go-related channel, Kv3.1, or the neuronal NaV1.2 channel. In addition, Psora-4 could suppress the proliferation of rat and

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human myelin-specific effector memory T cells with EC50 values of 60 and 25 nM, respectively, without persistently suppressing the peripheral blood naive and central memory T cells [1].

In vivo: In a study of in vivo toxicity in rats, Psora-4 was found not to show any signs of acute toxicity following five daily subcutaneous injections at 33 mg/kg body weight [1].

Clinical trial: N/A

Reference:

[1] Vennekamp J, Wulff H, Beeton C, Calabresi PA, Grissmer S, Hnsel W, Chandy KG. Kv1.3-blocking 5-phenylalkoxy-psoralens: a new class of immunomodulators. *Mol Pharmacol.* 2004 Jun;65(6):1364-74.

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