

Product data sheet



MedKoo Cat#: 205875 Name: Teriflunomide CAS#: 108605-62-5 Chemical Formula: C ₁₂ H ₉ F ₃ N ₂ O ₂ Exact Mass: 270.06161 Molecular Weight: 270.20727	
Product supplied as: Powder	
Purity (by HPLC): ≥ 98%	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Teriflunomide, also known as A77 1726, is the active metabolite of leflunomide. Teriflunomide is an immunomodulatory drug inhibiting pyrimidine de novo synthesis by blocking the enzyme dihydroorotate dehydrogenase. It is uncertain whether this explains its effect on MS lesions. Teriflunomide inhibits rapidly dividing cells, including activated T cells, which are thought to drive the disease process in MS. It has been found that teriflunomide blocks the transcription factor NF-κB. The drug was approved by the FDA on September 13, 2012.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	27.01	99.96

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.70 mL	18.50 mL	37.01 mL
5 mM	0.74 mL	3.70 mL	7.40 mL
10 mM	0.37 mL	1.85 mL	3.70 mL
50 mM	0.07 mL	0.37 mL	0.74 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Enose-Akahata Y, Ngouth N, Ohayon J, Mandel M, Chavin J, Turner TJ, Jacobson S. Effect of Teriflunomide on Cells From Patients With Human T-cell Lymphotropic Virus Type 1-Associated Neurologic Disease. *Neurol Neuroimmunol Neuroinflamm.* 2021 Apr 9;8(3):e986. doi: 10.1212/NXI.0000000000000986. PMID: 33837058; PMCID: PMC8054963.
- Wolters A, Reuther J, Gude P, Weber T, Theiss C, Vogelsang H, Matschke V. Teriflunomide provides protective properties after oxygen-glucose-deprivation in hippocampal and cerebellar slice cultures. *Neural Regen Res.* 2021 Nov;16(11):2243-2249. doi: 10.4103/1673-5374.310689. PMID: 33818508.

In vivo study

- Styr B, Gonen N, Zarhin D, Ruggiero A, Atsmon R, Gazit N, Braun G, Frere S, Vertkin I, Shapira I, Harel M, Heim LR, Katsenelson M, Rechnitz O, Fadila S, Derdikman D, Rubinstein M, Geiger T, Ruppin E, Slutsky I. Mitochondrial Regulation of the Hippocampal Firing Rate Set Point and Seizure Susceptibility. *Neuron.* 2019 Jun 5;102(5):1009-1024.e8. doi: 10.1016/j.neuron.2019.03.045. Epub 2019 Apr 29. PMID: 31047779; PMCID: PMC6559804.

Product data sheet



2. Prabhakara KS, Kota DJ, Jones GH, Srivastava AK, Cox CS Jr, Olson SD. Teriflunomide Modulates Vascular Permeability and Microglial Activation after Experimental Traumatic Brain Injury. *Mol Ther*. 2018 Sep 5;26(9):2152-2162. doi: 10.1016/j.ythe.2018.06.022. Epub 2018 Jul 5. PMID: 30037655; PMCID: PMC6127507.

7. Bioactivity

Biological target:

Teriflunomide (A77 1726, HMR-1726) inhibits pyrimidine de novo synthesis by blocking the enzyme dihydroorotate dehydrogenase, used as an immunomodulatory agent.

In vitro activity

After culture with teriflunomide 50 μ M, both CD8⁺ and CD4⁺ T cells showed a reduction in spontaneous lymphoproliferation (figure 2A). Group analysis of spontaneous CD8⁺ T-cell proliferation in 12 patients with HAM/TSP showed a significant and concentration-dependent suppression in culture with teriflunomide at day 5 ($p = 0.0025$; figure 2B). The average percent inhibition across all the patients with HAM/TSP was 54.3%, 64.1%, and 84.9% at 25, 50, and 100 μ M teriflunomide, respectively (figure 2C), which was consistent with proliferation assay using [³H] thymidine (figure 1E).

Reference: *Neurol Neuroimmunol Neuroinflamm*. 2021 May; 8(3): e986. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8054963/>

In vivo activity

Compared with baseline, i.c.v. TERI (Teriflunomide) injection caused a stable decrease of ~60% in the MFR of CA1 neurons (Figures 6A–6C). In contrast, similar amount of VEH did not affect the MFR across several hours of recording (Figure 6D; Figure S9D). These results reveal an inhibitory effect of TERI on spontaneous spiking activity in the hippocampus of behaving mice.

Reference: *Neuron*. 2019 Jun 5; 102(5): 1009–1024.e8. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6559804/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.