

Product data sheet



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| MedKoo Cat#: 530605 Name: 1400W HCl CAS#: 214358-33-5 (HCl) Chemical Formula: C ₁₀ H ₁₇ Cl ₂ N ₃ Exact Mass: 249.08 Molecular Weight: 250.167 | |
| 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:

1400W is a highly selective inducible nitric oxide synthase inhibitor and is a potential disease modifier in the rat kainate model of temporal lobe epilepsy. 1400W reduces ischemia reperfusion injury in an ex-vivo porcine model of the donation after circulatory death kidney donor. 1400W ameliorates acute hypobaric hypoxia/reoxygenation-induced cognitive deficits by suppressing the induction of inducible nitric oxide synthase in rat cerebral cortex microglia. 1400W blocks death pathway of LPS-induced activated-microglia to preOLs.

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 | 27.5 | 109.93 |
| Ethanol | 35.0 | 139.91 |
| Water | 30.01 | 119.96 |

4. Stock solution preparation table:

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---------------------------------------|---------|----------|----------|
| 1 mM | 4.00 mL | 19.99 mL | 39.97 mL |
| 5 mM | 0.80 mL | 4.00 mL | 7.99 mL |
| 10 mM | 0.40 mL | 2.00 mL | 4.00 mL |
| 50 mM | 0.08 mL | 0.40 mL | 0.80 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

1. Palumbo P, Lombardi F, Augello FR, Giusti I, Luzzi S, Dolo V, Cifone MG, Cinque B. NOS2 inhibitor 1400W Induces Autophagic Flux and Influences Extracellular Vesicle Profile in Human Glioblastoma U87MG Cell Line. *Int J Mol Sci.* 2019 Jun 20;20(12):3010. doi: 10.3390/ijms20123010. PMID: 31226744; PMCID: PMC6627770.

2. Sumayao R Jr, Newsholme P, McMorrow T. Inducible nitric oxide synthase inhibitor 1400W increases Na⁺, K⁺ -ATPase levels and activity and ameliorates mitochondrial dysfunction in Ctns null kidney proximal tubular epithelial cells. *Clin Exp Pharmacol Physiol.* 2018 Nov;45(11):1149-1160. doi: 10.1111/1440-1681.12998. Epub 2018 Jul 30. PMID: 29924417.

In vivo study

1. Putra M, Sharma S, Gage M, Gasser G, Hinojo-Perez A, Olson A, Gregory-Flores A, Puttachary S, Wang C, Anantharam V, Thippeswamy T. Inducible nitric oxide synthase inhibitor, 1400W, mitigates DFP-induced long-term neurotoxicity in the rat model. *Neurobiol Dis.* 2020 Jan;133:104443. doi: 10.1016/j.nbd.2019.03.031. Epub 2019 Mar 30. PMID: 30940499; PMCID: PMC6768773.

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2. Staunton CA, Barrett-Jolley R, Djouhri L, Thippeswamy T. Inducible nitric oxide synthase inhibition by 1400W limits pain hypersensitivity in a neuropathic pain rat model. *Exp Physiol*. 2018 Apr 1;103(4):535-544. doi: 10.1113/EP086764. Epub 2018 Mar 7. PMID: 29441689.

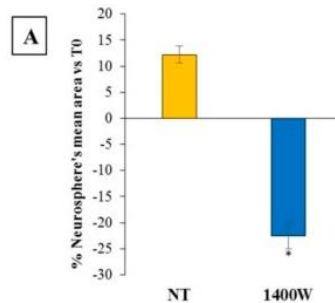
7. Bioactivity

Biological target:

1400W dihydrochloride is an inhibitor of human inducible NO synthase with K_i values of 7 nM.

In vitro activity

First, the growth of NS previously generated after a seven-day culture of adherent U87MG cells in GSC-M, as described in the Methods' section, was examined following treatment with 1400W (100 μ M) for 48 h. In these conditions, NOS2 inhibitor significantly affected the GSC growth, as assayed by measuring the sphere average area in mm^2 . Indeed, as shown in Figure 2A, while the average surface of untreated NS after 48 h culture was increasing by >10%, the addition of 1400W led to a ~22–23% decrease of NS mean area vs relative T0.



Reference: *Int J Mol Sci*. 2019 Jun; 20(12): 3010. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6627770/>

In vivo activity

At 24h post-exposure in rats, 1400W treatment (20 mg/kg, two doses at 12h interval, the first dose was administered 2h post-diazepam) suppressed DFP-induced iNOS and 3-NT upregulation in both hippocampus and piriform cortex as revealed by WB (Fig. 4A–4D) suggesting the pharmacological inhibition of iNOS as well as the suppression of iNOS synthesis. DFP-induced serum nitrite levels were also significantly suppressed by 1400W at 24h post-exposure (Fig. 4E) suggesting the activation of iNOS in peripheral leukocytes by DFP and suppression by 1400W.

Reference: *Neurobiol Dis*. 2020 Jan; 133: 104443. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6768773/>

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.