

Product data sheet



MedKoo Cat#: 555939 Name: AA92593 CAS#: 457961-34-1 Chemical Formula: C ₁₃ H ₁₉ NO ₃ S Exact Mass: 269.1086 Molecular Weight: 269.359	
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:

AA92593, also known as Cy1001, is a selective melanopsin inhibitor. AA92593 blocks melanopsin activity and stimulates α -melanocyte-stimulating hormone (α -MSH) expression and induces melanin distribution in the melanophores, which darkens the embryo.

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	54.0	200.48

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.71 mL	18.56 mL	37.13 mL
5 mM	0.74 mL	3.71 mL	7.43 mL
10 mM	0.37 mL	1.86 mL	3.71 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

1. Moraes MN, de Assis LVM, Magalhães-Marques KK, Poletini MO, de Lima LHRG, Castrucci AML. Melanopsin, a Canonical Light Receptor, Mediates Thermal Activation of Clock Genes. *Sci Rep.* 2017 Oct 25;7(1):13977. doi: 10.1038/s41598-017-13939-3. PMID: 29070825; PMCID: PMC5656685.

2. Bertolesi GE, Vazhappilly ST, Hehr CL, McFarlane S. Pharmacological induction of skin pigmentation unveils the neuroendocrine circuit regulated by light. *Pigment Cell Melanoma Res.* 2016 Mar;29(2):186-98. doi: 10.1111/pcmr.12442. PMID: 26582755.

In vivo study

1. Zheng W, Chen Y, Zhou X, Zhang X, Chen Y, Guan X, Mao J. Regulation of Retinal Melanopsin on Lens-induced Myopia in Guinea Pigs. *Optom Vis Sci.* 2020 Jul;97(7):489-495. doi: 10.1097/OPX.0000000000001529. PMID: 32697555.

2. Pintor J. Light-induced ATP release from the lens. *Purinergic Signal.* 2018 Dec;14(4):499-504. doi: 10.1007/s11302-018-9626-3. Epub 2018 Sep 20. PMID: 30238191; PMCID: PMC6298921.

7. Bioactivity

Biological target:

AA92593 is a selective antagonist of Melanopsin (OPN4).

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In vitro activity

This study then pharmacologically inhibited melanopsin with the antagonist AA92593, shown to be specific because it competes with retinaldehyde for the melanopsin retinal binding site which is very distinct from other opsins. These data show that the increase of Per1 level induced by heat in Melan-a and B16-F10 cells was significantly reduced in the presence of the melanopsin antagonist (Fig. 3A,C) whereas Bmal1 expression was not affected (Fig. 3B,D). Surprisingly, in Melan-a cells the group incubated with the antagonist and kept at 37 °C showed a statistically significant increase of Per1 transcript when compared to DMSO-treated control group ($p = 0.0478$, Fig. 3A); a phenomenon that showed no statistical significance ($p = 0.08$) in B16-F10 cells.

Reference: Sci Rep. 2017; 7: 13977. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5656685/>

In vivo activity

The contents of dopamine and melatonin in the retinal neural epithelium of the guinea pigs in the control group were 1.02 ± 0.30 and 0.36 ± 0.09 ng/mg, respectively. The content of dopamine in the defocus group decreased to 0.64 ± 0.18 ng/mg ($P = .008$), whereas the melatonin content was 0.38 ± 0.09 ng/mg ($P = .58$). The intravitreal injection of AA92593 into the defocus eyes resulted in a marked increase in melatonin content in retinal neuroepithelium (0.55 ± 0.13 ng/mg; $P = .01$) compared with the defocus group, but had no marked effect on the dopamine content (0.61 ± 0.17 ng/mg; $P > .99$; Figs. 4A, B). In the defocus + AA92593 group, the melatonin content of the retinal neuroepithelium was correlated with the refractive error (Pearson correlation coefficient = -0.68 , $P = .006$) and axial length (Pearson correlation coefficient = 0.74 , $P = .02$; Figs. 4C, D).

Reference: Optom Vis Sci. 2020 Jul;97(7):489-495. <https://pubmed.ncbi.nlm.nih.gov/32697555/>

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.