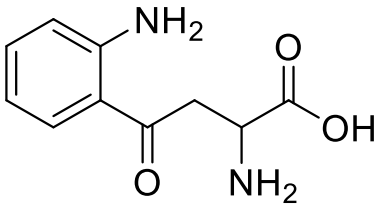


# Product data sheet



MedKoo Cat#: 592619 Name: Kynurenine CAS: 343-65-7 Chemical Formula: C <sub>10</sub> H <sub>12</sub> N <sub>2</sub> O <sub>3</sub> Exact Mass: 208.0848 Molecular Weight: 208.217	
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:

Kynurenine is a metabolite of the essential amino acid tryptophan metabolized via the tryptophan-kynurenine pathway. It causes vasodilation and hypotension induced by activation of KCNQ-encoded voltage-dependent K(+) channels..

## 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
1M HCl	20.0	96.05

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.80 mL	24.01 mL	48.03 mL
5 mM	0.96 mL	4.80 mL	9.61 mL
10 mM	0.48 mL	2.40 mL	4.80 mL
50 mM	0.10 mL	0.48 mL	0.96 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. Oweira H, Lahdou I, Mehrle S, Khajeh E, Nikbakhsh R, Ghamarnejad O, Terness P, Reißfelder C, Sadeghi M, Ramouz A. Kynurenine Is the Main Metabolite of Tryptophan Degradation by Tryptophan 2,3-Dioxygenase in HepG2 Tumor Cells. *J Clin Med.* 2022 Aug 16;11(16):4794. doi: 10.3390/jcm11164794. PMID: 36013032; PMCID: PMC9410271.

2. Siska PJ, Jiao J, Matos C, Singer K, Berger RS, Dettmer K, Oefner PJ, Cully MD, Wang Z, Quinn III WJ, Oliff KN, Wilkins BJ, Christensen LM, Wang L, Hancock WW, Baur JA, Levine MH, Ugele I, Mayr R, Renner K, Zhou L, Kreutz M, Beier UH. Kynurenine induces T cell fat catabolism and has limited suppressive effects in vivo. *EBioMedicine.* 2021 Dec;74:103734. doi: 10.1016/j.ebiom.2021.103734. Epub 2021 Dec 4. PMID: 34875457; PMCID: PMC8652007.

### In vivo study

1. Zhang D, Ning J, Ramprasath T, Yu C, Zheng X, Song P, Xie Z, Zou MH. Kynurenine promotes neonatal heart regeneration by stimulating cardiomyocyte proliferation and cardiac angiogenesis. *Nat Commun.* 2022 Oct 26;13(1):6371. doi: 10.1038/s41467-022-33734-7. PMID: 36289221; PMCID: PMC9606021.

2. Huang T, Song J, Gao J, Cheng J, Xie H, Zhang L, Wang YH, Gao Z, Wang Y, Wang X, He J, Liu S, Yu Q, Zhang S, Xiong F, Zhou Q, Wang CY. Adipocyte-derived kynurenine promotes obesity and insulin resistance by activating the AhR/STAT3/IL-6 signaling. *Nat Commun.* 2022 Jun 17;13(1):3489. doi: 10.1038/s41467-022-31126-5. PMID: 35715443; PMCID: PMC9205899.

# Product data sheet



## 7. Bioactivity

### Biological target:

2-Amino-4-(2-aminophenyl)-4-oxobutanoic acid is an endogenous metabolite.

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### In vitro activity

Kyn (kynurenine) is the main metabolite of Trp degradation by TDO in HepG2 cells. The accumulation of Kyn in HepG2 cells could be a key mechanism for tumor immune resistance.

Reference: J Clin Med. 2022 Aug 16;11(16):4794. <https://pubmed.ncbi.nlm.nih.gov/36013032/>

### In vivo activity

Mechanistically, elevated kynurenine triggers cardiomyocyte proliferation in mice by activating the cytoplasmic aryl hydrocarbon receptor-SRC-YAP/ERK pathway. In addition, cardiomyocyte-derived kynurenine transports to endothelial cells and stimulates cardiac angiogenesis by promoting aryl hydrocarbon receptor nuclear translocation and enhancing vascular endothelial growth factor A expression.

Reference: Nat Commun. 2022 Oct 26;13(1):6371. <https://pubmed.ncbi.nlm.nih.gov/36289221/>

*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.*