Product data sheet



MedKoo Cat#: 524172		
Name: AM-1241		
CAS#: 444912-48-5		
Chemical Formula: C ₂₂ H ₂₂ IN ₃ O ₃		
Exact Mass: 503.0705		Ń
Molecular Weight: 503.		
Product supplied as:	Powder	
Purity (by HPLC):	$\geq 98\%$	
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:

AM-1241 is a chemical from the aminoalkylindole family that acts as a potent and selective agonist for the cannabinoid receptor CB2. It has analgesic effects in animal studies, particularly against "atypical" pain such as hyperalgesia and allodynia.

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	55.5	110.27		
DMF	25.0	49.67		
DMF:PBS (pH 7.2)	0.3	0.60		
(1:2)				
Ethanol	5.0	9.93		

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.99 mL	9.93 mL	19.87 mL
5 mM	0.40 mL	1.99 mL	3.97 mL
10 mM	0.20 mL	0.99 mL	1.99 mL
50 mM	0.04 mL	0.20 mL	0.40 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. Zhang M, Zhang M, Wang L, Yu T, Jiang S, Jiang P, Sun Y, Pi J, Zhao R, Guan D. Activation of cannabinoid type 2 receptor protects skeletal muscle from ischemia-reperfusion injury partly via Nrf2 signaling. Life Sci. 2019 Aug 1;230:55-67. doi: 10.1016/j.lfs.2019.05.056. Epub 2019 May 22. PMID: 31128135.

2. Han D, Li X, Fan WS, Chen JW, Gou TT, Su T, Fan MM, Xu MQ, Wang YB, Ma S, Qiu Y, Cao F. Activation of cannabinoid receptor type II by AM1241 protects adipose-derived mesenchymal stem cells from oxidative damage and enhances their therapeutic efficacy in myocardial infarction mice via Stat3 activation. Oncotarget. 2017 May 4;8(39):64853-64866. doi: 10.18632/oncotarget.17614. PMID: 29029396; PMCID: PMC5630296.

In vivo study

1. Liu W, Chen C, Gu X, Zhang L, Mao X, Chen Z, Tao L. AM1241 alleviates myocardial ischemia-reperfusion injury in rats by enhancing Pink1/Parkin-mediated autophagy. Life Sci. 2021 May 1;272:119228. doi: 10.1016/j.lfs.2021.119228. Epub 2021 Feb 16. PMID: 33607150.

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2. Ali AM, El-Tawil OS, Al-Mokaddem AK, Abd El-Rahman SS. Promoted inhibition of TLR4/miR-155/ NFkB p65 signaling by cannabinoid receptor 2 agonist (AM1241), aborts inflammation and progress of hepatic fibrosis induced by thioacetamide. Chem Biol Interact. 2021 Feb 25;336:109398. doi: 10.1016/j.cbi.2021.109398. Epub 2021 Jan 24. PMID: 33503444.

7. Bioactivity

Biological target:

AM-1241 is a selective cannabinoid CB2 receptor agonist with Ki of 3.4 nM, exhibits 82-fold selectivity over CB1 receptor.

In vitro activity

Pretreatment with AM1241 significantly and dose-dependently prevented the H₂O₂-induced reduction of cell viability (Fig. 5A). Reactive oxygen species levels significantly and dose-dependently decreased in the presence of AM1241 (Fig. 5B, C). with AM1241 before H₂O₂ exposure significantly and dose-dependently protected myoblasts against apoptosis (Fig. 5D). Western blot revealed a significant increase in the protein levels of cleaved caspase 3, a marker of apoptosis, in H₂O₂-treated myoblasts compared with control myoblasts, and pretreatment with AM1241 significantly decreased cleaved caspase 3 protein levels (Fig. 5E). Immunofluorescent staining showed that Nrf2 in control myoblasts was mainly localized in the cytoplasm but translocated to nuclei after AM1241 treatment (Fig. 5F). Western blot showed that non-cytotoxic concentrations of AM1241 dose-dependently increased Nrf2 and HO-1 protein expression and accumulation of Nrf2 in the nuclear fraction (Fig. 5G).

Reference: Life Sci. 2019 Aug 1;230:55-67. https://pubmed.ncbi.nlm.nih.gov/31989652/

In vivo activity

ELISA results showed that compared with sham group, the serum levels of cTnI, CK-MB, AST and LDH were significantly increased in the I/R group (P < 0.05), indicating that myocardial injury occurred in rats exposed to I/R. However, AM1241 significantly alleviated the upward trend in a dose-dependent way (P < 0.05) (Fig. 1A). In addition, EB/TTC staining results showed that AM1241 treatment significantly reduced the large area of myocardial infarction induced by I/R (P < 0.05) (Fig. 1B).

Reference: Life Sci. 2021 May 1;272:119228. https://pubmed.ncbi.nlm.nih.gov/33607150/

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.