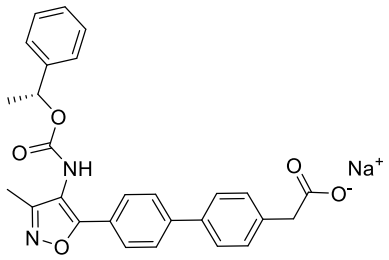
Product data sheet

MedKoo Cat#: 406568 Name: AM095 sodium CAS#: 1345614-59-6 (sodium) Chemical Formula: $C_{27}H_{23}N_2NaO_5$ Molecular Weight: 478.47	
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:

AM095 is a potent LPA1 receptor antagonist because it inhibited GTPγS binding to Chinese hamster ovary (CHO) cell membranes overexpressing recombinant human or mouse LPA1 with IC50 values of 0.98 and 0.73 μM, respectively, and exhibited no LPA1 agonism. Lysophosphatidic acid (LPA) is a bioactive phospholipid that signals through a family of at least six G protein-coupled receptors designated LPA1-6. LPA type 1 receptor (LPA1) exhibits widespread tissue distribution and regulates a variety of physiological and pathological cellular functions.

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	83.33	174.16

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.09 mL	10.45 mL	20.90 mL
5 mM	0.42 mL	2.09 mL	4.18 mL
10 mM	0.21 mL	1.04 mL	2.09 mL
50 mM	0.04 mL	0.21 mL	0.42 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. Gento-Caro Á, Vilches-Herrando E, García-Morales V, Portillo F, Rodríguez-Bey G, González-Forero D, Moreno-López B. Interfering with lysophosphatidic acid receptor edg2/lpa1 signalling slows down disease progression in SOD1-G93A transgenic mice. Neuropathol Appl Neurobiol. 2021 Jan 28. doi: 10.1111/nan.12699. Epub ahead of print. PMID: 33508894.

In vivo study

1. Gaire BP, Sapkota A, Song MR, Choi JW. Lysophosphatidic acid receptor 1 (LPA1) plays critical roles in microglial activation and brain damage after transient focal cerebral ischemia. J Neuroinflammation. 2019 Aug 20;16(1):170. doi: 10.1186/s12974-019-1555-8. PMID: 31429777; PMCID: PMC6701099.
2. Lee JH, Sarker MK, Choi H, Shin D, Kim D, Jun HS. Lysophosphatidic acid receptor 1 inhibitor, AM095, attenuates diabetic nephropathy in mice by downregulation of TLR4/NF-κB signaling and NADPH oxidase. Biochim Biophys Acta Mol Basis Dis. 2019 Jun 1;1865(6):1332-1340. doi: 10.1016/j.bbadis.2019.02.001. Epub 2019 Feb 11. PMID: 30763641.

7. Bioactivity

Biological target:

AM095 is a selective LPA1 receptor antagonist.

Product data sheet

In vitro activity

Furthermore, the addition of AM095 to the culture medium strongly attenuated LPA toxicity on SMNs (Figure 7F). $mRNA_{lpa3}$ is less abundant than $mRNA_{lpa1}$ in the hypoglossal nucleus (−59.4% ± 5.7%) of neonatal rats and in SMNs (−98.6% ± 0.1%). In addition, AM095 is 8-times more effective at lpa_1 than lpa_3, without significant antagonism against $lpa_{2,4,5}$. Therefore, AM095 effects on MN IME and LPA-induced cytotoxicity would be mainly explained by lpa_1 targeting, although involvement of another LPAR cannot be fully excluded.

Reference: Neuropathol Appl Neurobiol. 2021 Jan 28. https://pubmed.ncbi.nlm.nih.gov/33508894/

In vivo activity

In vehicle-treated tMCAO group, severe brain infarction was developed in both the cerebral cortex and striatum (30.99 ± 1.77%), which was markedly reduced by AM095 administration (19.15 ± 3.84%; Fig. 1a, b). Similarly, AM095 administration significantly improved neurological functions in ischemic mice compared with vehicle administration (Fig. 1c). In addition, AM095 administration 1 h prior to tMCAO challenge significantly prevented brain damage compared with vehicle administration as assessed by brain infarction (Additional file 2: Figure S2a, b) and neurological deficit score (Additional file 2: Figure S2c). These data demonstrate that pharmacological inhibition of LPA1 can reduce brain damage in tMCAO-challenged mice, clearly suggesting that LPA1 signaling contributes to brain damage in cerebral ischemia.

Reference: J Neuroinflammation. 2019; 16: 170. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6701099/