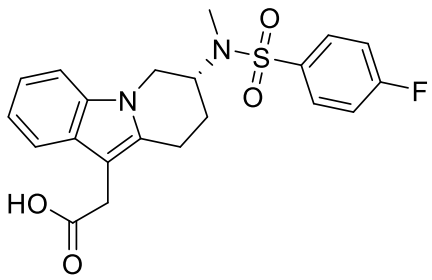
Product data sheet

MedKoo Cat#: 525701 Name: MK-7246 CAS#: 1218918-62-7 Chemical Formula: $C_{21}H_{21}FN_2O_4S$ Exact Mass: 416.12061 Molecular Weight: 416.4674	
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:
MK-7246 is a potent and selective CRTH2 (chemoattractant receptor-homologous molecule expressed on T-helper type 2 cells) antagonist. MK-7246 is used for the treatment of respiratory diseases.

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	250.0	600.28

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.40 mL	12.01 mL	24.01 mL
5 mM	0.48 mL	2.40 mL	4.80 mL
10 mM	0.24 mL	1.20 mL	2.40 mL
50 mM	0.05 mL	0.24 mL	0.48 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. Cheung P, Zhang B, Puuvuori E, Estrada S, Amin MA, Ye S, Korsgren O, Odell LR, Eriksson J, Eriksson O. PET Imaging of GPR44 by Antagonist [11C]MK-7246 in Pigs. Biomedicines. 2021 Apr 16;9(4):434. doi: 10.3390/biomedicines9040434. PMID: 33923731; PMCID: PMC8073488.
2. Eriksson O. GPR44 as a Target for Imaging Pancreatic Beta-Cell Mass. Curr Diab Rep. 2019 Jun 27;19(8):49. doi: 10.1007/s11892-019-1164-z. PMID: 31250117; PMCID: PMC6597591.

In vivo study

1. Gil MA, Caniga M, Woodhouse JD, Eckman J, Lee HH, Salmon M, Naber J, Hamilton VT, Sevilla RS, Bettano K, Klappenbach J, Moy L, Correll CC, Gervais FG, Siliphaivanh P, Zhang W, Zhang-Hoover J, McLeod RL, Cicmil M. Anti-inflammatory actions of Chemoattractant Receptor-homologous molecule expressed on Th2 by the antagonist MK-7246 in a novel rat model of Alternaria alternata elicited pulmonary inflammation. Eur J Pharmacol. 2014 Nov 15;743:106-16. doi: 10.1016/j.ejphar.2014.09.021. Epub 2014 Sep 23. PMID: 25261040.
2. Cheung P, Zhang B, Puuvuori E, Estrada S, Amin MA, Ye S, Korsgren O, Odell LR, Eriksson J, Eriksson O. PET Imaging of GPR44 by Antagonist [11C]MK-7246 in Pigs. Biomedicines. 2021 Apr 16;9(4):434. doi: 10.3390/biomedicines9040434. PMID: 33923731; PMCID: PMC8073488.

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7. Bioactivity

Biological target:

MK-7246 is a potent and selective CRTH2 antagonist with a Ki of 2.5±0.5 nM.

In vitro activity

The selective GPR44 antagonist MK-7246 was radiolabeled with carbon-11 and the resulting positron-emission tomography (PET) tracer [11C]MK-7246 was evaluated in in vitro cell lines. GPR44-overexpressing CHO-K1 frozen sections showed a significantly higher binding of [11C]MK-7246 (uptake signal = 43.91 ± 14.67 Bq/MBqinj, n = 12) compared with the nontransfected CHO-K1 negative control (uptake signal = 8.74 ± 1.83 Bq/MBqinj, n = 8) ($p < 0.05$). As expected, the binding could be blocked in the CHO-K1 sections overexpressing GPR44 by coincubation of the nonradioactive MK-7246 compound ($p < 0.05$) (Figure 2). More importantly, specificity of the binding was repeatedly demonstrated through a decrease in binding after coincubation with excess nonradioactive MK-7246, after which the radiolabeled [11C]MK-7246 displayed the same binding properties as the unlabeled nonradioactive MK-7246.

Reference: Biomedicines. 2021 Apr; 9(4): 434. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8073488/

In vivo activity

Since CRTH2 plays an important role in the early aspects of the allergic inflammation cascade (Kostenis and Ulven, 2006), the effect of the CRTH2 antagonist on A. alternata elicited pulmonary inflammatory responses was examined. The CRTH2 inhibitor MK-7246 was orally adminstered, 1 h before and 23 h post-intratracheal instillation of the A. alternata. The MK-7246 produced a dose dependent decrease in the number of eosinophils with a maximal inhibition of 74±5% in the 100 mg kg−1 group ($P<0.05$) (Fig. 8 a), IL-5 (80±12%) and IL-13 (76±14%) cytokines levels ($P<0.05$) (Fig. 8 B and C). The results reported show BAL fluid recovered from BN rats 48 h following the intratracheal. challenge with A. alternata. Moreover, it has been demonstrated for the first time that the CRTH2 antagonist can reduce eosinophilia, most likely through inhibiting ILC2 mediated responses in the A. alternata model.

Reference: Eur J Pharmacol. 2014 Nov 15;743:106-16. https://pubmed.ncbi.nlm.nih.gov/25261040/