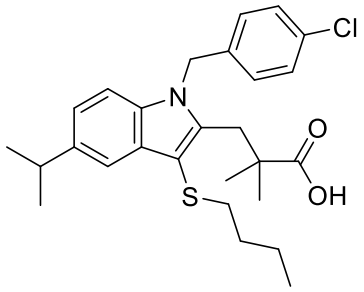
Product data sheet

MedKoo Cat#: 407217 Name: MK-886 CAS#: 118414-82-7 (free acid) Chemical Formula: $C_{27}H_{34}ClNO_2S$ Exact Mass: 471.19988 Molecular Weight: 472.084	
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-886, also known as L 663536, is a leukotriene antagonist. It may perform this by blocking the 5-lipoxygenase activating protein (FLAP), thus inhibiting 5-lipoxygenase (5-LOX), and may help in treating atherosclerosis. MK-886 inhibits cyclooxygenase-1 activity and suppresses platelet aggregation. MK-886 induces changes in cell cycle and increases apoptosis after photodynamic therapy with hypericin. MK-886 enhances tumour necrosis factor-alpha-induced differentiation and apoptosis.

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	75	158.87

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.12 mL	10.59 mL	21.18 mL
5 mM	0.42 mL	2.12 mL	4.24 mL
10 mM	0.21 mL	1.06 mL	2.12 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. Kehrer JP, Biswal SS, La E, Thuillier P, Datta K, Fischer SM, Vanden Heuvel JP. Inhibition of peroxisome-proliferator-activated receptor (PPAR)alpha by MK886. Biochem J. 2001 Jun 15;356(Pt 3):899-906. doi: 10.1042/0264-6021:3560899. PMID: 11389700; PMCID: PMC1221919.

2. Gillard J, Ford-Hutchinson AW, Chan C, Charleson S, Denis D, Foster A, Fortin R, Leger S, McFarlane CS, Morton H, et al. L-663,536 (MK-886) (3-[1-(4-chlorobenzyl)-3-t-butyl-thio-5-isopropylindol-2-yl]-2,2 - dimethylpropanoic acid), a novel, orally active leukotriene biosynthesis inhibitor. Can J Physiol Pharmacol. 1989 May;67(5):456-64. doi: 10.1139/y89-073. PMID: 2548691.

In vivo study

1. Gillard J, Ford-Hutchinson AW, Chan C, Charleson S, Denis D, Foster A, Fortin R, Leger S, McFarlane CS, Morton H, et al. L-663,536 (MK-886) (3-[1-(4-chlorobenzyl)-3-t-butyl-thio-5-isopropylindol-2-yl]-2,2 - dimethylpropanoic acid), a novel, orally active leukotriene biosynthesis inhibitor. Can J Physiol Pharmacol. 1989 May;67(5):456-64. doi: 10.1139/y89-073. PMID: 2548691.

7. Bioactivity
Biological target:

Product data sheet

MK-886 (L 663536) is a potent, cell-permeable and orally active FLAP (IC50 of 30 nM) and leukotriene biosynthesis (IC50s of 3 nM and 1.1 µM in intact leukocytes and human whole blood, respectively) inhibitor.

In vitro activity

The ability of MK886 to affect PPAR-α, -β and -γ activity was assessed using transient transfection reporter assays in CV-1 and keratinocyte 308 cell lines, and a stable transfection system in CV-1 cells. In all systems examined, 10 µM MK886 was able to inhibit Wy14,643 activation of PPARα by approx. 80% (Table 1). A dose–response study in keratinocyte 308 cells showed inhibition of 30³5, 65³7 and 70³8% at doses of 0.5, 1 and 5 µM MK886 respectively (n¯9). At doses between 10 and 20 µM, PPARα reporter assay activity levels were actually below the basal activity recorded in non-treated controls, suggesting inhibition of the endogenous PPARα. At doses over 20 µM, toxicity of MK886 precluded any useful measurements. MK886 also decreased PPARα activation by fatty acids in the stable transfection system (results not shown), indicating that its effect is not specific to activation by Wy14,643. Effects of MK886 on PPARβ activated with bezafibrate were substantial (48% inhibition) using the stable transfection assay in CV-1 cells, but were not evident using the transient transfection reporter assay in CV-1 cells or keratinocytes (Table 1), perhaps because of low reporter activity. Inhibition by MK886 of PPARγ activated with 15-deoxy-Δ"#,"%-prostaglandin J# was also substantially lower than that seen with PPARα. The large standard error with PPARγ in the stable transfection system is a consequence of the very low activation achieved. The effect of MK886 on PPARα was also investigated in A549 human lung adenocarcinoma cells. There was no enhancement in reporter activity with activators of PPARβ and PPARγ using this cell line. As a result, it was not feasible to look at the effect of MK886 on PPARβ or PPARγ in this system. However, 20 µM MK886 did inhibit PPARα by 73% relative to levels seen following activation with 100 µM Wy14,643 (Table 2). Similar levels of inhibition were seen if activation was achieved with 50 µM Wy14,643 (results not shown).

Reference: Biochem J. 2001 Jun 15;356(Pt 3):899-906. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/11389700/

In vivo activity

When administered in vivo MK-886 (L-663,536) was a potent inhibitor of antigen-induced dyspnea in inbred rats pretreated with methysergide (ED50, 0.036 mg/kg p.o.) and of Ascaris-induced bronchoconstriction in squirrel monkeys (1 mg/kg p.o.). The compound inhibited leukotriene biosynthesis in vivo in a rat pleurisy model (ED50, 0.2 mg/kg p.o.), an inflamed rat paw model (ED50, 0.8 mg/kg), a model of leukotriene excretion in rat bile following antigen provocation, and a model in the guinea-pig ear where leukotriene synthesis was induced by topical challenge with ionophore A23187 (ED50, 2.5 mg/kg p.o. and 0.6 micrograms topically).

Reference: Can J Physiol Pharmacol. 1989 May;67(5):456-64. https://cdnsciencepub.com/doi/10.1139/y89-073?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

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.