Product data sheet



MedKoo Cat#: 206167				
Name: Laquinimod				
CAS#: 248281-84-7				
Chemical Formula: C ₁₉ H ₁₇ ClN ₂ O ₃				
Exact Mass: 356.09277				
Molecular Weight: 356.8				
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:

Laquinimod is an experimental immunomodulator developed by Active Biotech and Teva. It is being investigated as an oral treatment for multiple sclerosis (MS). Laquinimod is the successor of Active Biotech's failed experimental immunomodulator linomide. Laquinimod seems to be able to reduce the MS disease activity on MRI. In 2011, Teva announced its clinical trials involving laquinimod had failed, being unable to significantly reduce relapses into MS among patients beyond a placebo. However, the final results of above-mentioned phase III trial proved oral laquinimod administered once daily slowed the progression of disability and reduced the rate of relapse in patients with relapsing–remitting multiple sclerosis.

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	57.0	159.75
DMF	20.0	56.05
Ethanol	1.5	4.20

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.80 mL	14.01 mL	28.03 mL
5 mM	0.56 mL	2.80 mL	5.61 mL
10 mM	0.28 mL	1.40 mL	2.80 mL
50 mM	0.06 mL	0.28 mL	0.56 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. Colombo E, Pascente R, Triolo D, Bassani C, De Angelis A, Ruffini F, Ottoboni L, Comi G, Martino G, Farina C. Laquinimod Modulates Human Astrocyte Function and Dampens Astrocyte-Induced Neurotoxicity during Inflammation. Molecules. 2020 Nov 18;25(22):5403. doi: 10.3390/molecules25225403. PMID: 33218208; PMCID: PMC7699283.

2. Jiang T, Zhang W, Wang Z. Laquinimod Protects Against TNF-α-Induced Attachment of Monocytes to Human Aortic Endothelial Cells (HAECs) by Increasing the Expression of KLF2. Drug Des Devel Ther. 2020 Apr 30;14:1683-1691. doi: 10.2147/DDDT.S243666. PMID: 32440094; PMCID: PMC7222522.

In vivo study

1. Li Z, Chen J, Lei L, Jiang N, Zhu Y, Jia Y, Zhuo Y, Su W. Laquinimod Inhibits Inflammation-Induced Angiogenesis in the Cornea. Front Med (Lausanne). 2020 Nov 10;7:598056. doi: 10.3389/fmed.2020.598056. PMID: 33244468; PMCID: PMC7683777.

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2. Wang G, Wu B, Zhang L, Cui Y, Zhang B, Wang H. Laquinimod Prevents Adipogenesis and Obesity by Down-Regulating PPAR-γ and C/EBPα through Activating AMPK. ACS Omega. 2020 Sep 1;5(36):22958-22965. doi: 10.1021/acsomega.0c02525. PMID: 32954145; PMCID: PMC7495734.

7. Bioactivity

Biological target:

Laquinimod is a potent immunomodulator which prevents neurodegeneration and inflammation in the central nervous system.

In vitro activity

To address the effect of Laq (Laquinimod) and de-Laq (Laquinimod's active metabolite) (Figure 2A) on astrocyte activation, this study verified the impact of drug treatment on nuclear translocation of NF κ B. As shown in Figure 2B, several nuclei were positive for NF κ B when cells were stimulated with the inflammatory cytokine IL1 β (CTRL vs. IL1 β p < 0.001). On the contrary, when astrocytes were previously exposed for 4 h to Laq or de-Laq, IL1 β -induced NF κ B nuclear translocation was blocked (Figure 2B,C; IL1 β vs. Laq + IL1 β or de-Laq + IL1 β p < 0.001).

Reference: Molecules. 2020 Nov; 25(22): 5403. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7699283/

In vivo activity

Macrophages and other inflammatory cell types play a pivotal role in the development of inflammatory CNV. To further understand the effect of laquinimod on CNV, this study compared each mouse group by H&E staining and immunofluorescent staining of F4/80 or CD11b in injured corneas. H&E staining showed that numerous inflammatory cells infiltrated the cornea after alkali injury but were noticeably decreased in the laquinimod-treated group (Figures 2A,B). Furthermore, the number of cells that were positive for F4/80 [a macrophage marker] or CD11b [a molecule that controls monocyte migration] was significantly increased in the alkali-injured cornea but was noticeably decreased in the laquinimod-treated group (Figures 2A,C,D). These data suggest that macrophages and other inflammatory cell types were significantly attenuated by laquinimod treatment in alkali-injured corneas.

Reference: Front Med (Lausanne). 2020; 7: 598056. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7683777/

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.