

# Product data sheet



MedKoo Cat#: 318083 Name: Labetalol Hydrochloride CAS: 32780-64-6 (HCl) Chemical Formula: C <sub>19</sub> H <sub>25</sub> ClN <sub>2</sub> O <sub>3</sub> Molecular Weight: 364.87	
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:

Labetalol is a mixed alpha/beta adrenergic antagonist that is used to treat high blood pressure. It can be given intravenously in severe hypertensive situations, or by mouth for long term hypertension management. Studies suggest that the pharmacokinetics of labetalol are significantly affected by the common CYP2C19 polymorphisms.

## 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
DMF	30.0	82.22
DMSO	62.33	170.84
Ethanol	3.65	10.0
Water	14.0	38.37

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.74 mL	13.70 mL	27.41 mL
5 mM	0.55 mL	2.74 mL	5.48 mL
10 mM	0.27 mL	1.37 mL	2.74 mL
50 mM	0.06 mL	0.27 mL	0.55 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. Zambrano P, Suwalsky M, Jemiola-Rzeminska M, Strzalka K.  $\alpha$ 1- and  $\beta$ -adrenergic antagonist labetalol induces morphological changes in human erythrocytes. *Biochem Biophys Res Commun*. 2018 Sep 3;503(1):209-214. doi: 10.1016/j.bbrc.2018.06.004. Epub 2018 Jun 6. PMID: 29879427.

2. Kouoh F, Gressier B, Dine T, Luyckx M, Brunet C, Ballester L, Cazin JC. In vitro and ex vivo antioxidant activities of labetalol on rabbit neutrophil respiratory burst. *Adv Ther*. 2004 May-Jun;21(3):178-85. doi: 10.1007/BF02850123. PMID: 15509134.

### In vivo study

1. Xiao C, Zhou C, Atlas G, Delphin E, Ye JH. Labetalol facilitates GABAergic transmission to rat periaqueductal gray neurons via antagonizing beta1-adrenergic receptors--a possible mechanism underlying labetalol-induced analgesia. *Brain Res*. 2008 Mar 10;1198:34-43. doi: 10.1016/j.brainres.2008.01.023. Epub 2008 Jan 18. PMID: 18262504; PMCID: PMC2276360.

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2. Erdtsieck-Ernste EB, Feenstra MG, Botterblom MH, De Barrios J, Boer GJ. Changes in adrenoceptors and monoamine metabolism in neonatal and adult rat brain after postnatal exposure to the antihypertensive labetalol. Br J Pharmacol. 1992 Jan;105(1):37-44. doi: 10.1111/j.1476-5381.1992.tb14207.x. PMID: 1596689; PMCID: PMC1908619.

## 7. Bioactivity

### Biological target:

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Labetalol hydrochloride is a mixed alpha/beta adrenergic antagonist that is used to treat high blood pressure.

### In vitro activity

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On the other hand, results obtained by scanning electron microscopy (SEM) showed that labetalol alters the normal biconcave form of erythrocytes to stomatocytes and knizocytes (cells with one or more cavities, respectively).

Reference: Biochem Biophys Res Commun. 2018 Sep 3;503(1):209-214. <https://pubmed.ncbi.nlm.nih.gov/29879427/>

### In vivo activity

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Chronic labetalol treatment (10 mg kg<sup>-1</sup>, s.c., twice daily) during the first 10 days of life in rat brain significantly increased alpha 1-adrenoceptor binding in the hypothalamus (+39%), but not in the occipital cortex.

Reference: Br J Pharmacol. 1992 Jan;105(1):37-44. <https://pubmed.ncbi.nlm.nih.gov/1596689/>

*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.*