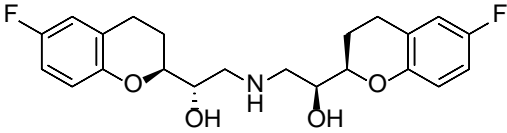


# Product data sheet



MedKoo Cat#: 319892 Name: Levonebivolol CAS: 118457-16-2 Chemical Formula: C <sub>22</sub> H <sub>25</sub> F <sub>2</sub> NO <sub>4</sub> Exact Mass: 405.1752 Molecular Weight: 405.4418	
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:

Levonebivolol, also known as R 67145, is an enantiomer of Nebivolol which is a  $\beta_1$  receptor blocker with nitric oxide-potentiating vasodilatory effect used in treatment of hypertension and, in Europe, also for left ventricular failure. It is highly cardioselective under certain circumstances.

## 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
TBD	TBD	TBD

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.47 mL	12.33 mL	24.66 mL
5 mM	0.49 mL	2.47 mL	4.93 mL
10 mM	0.25 mL	1.23 mL	2.47 mL
50 mM	0.05 mL	0.25 mL	0.49 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. Bueno-Pereira TO, Nunes PR, Matheus MB, Vieira da Rocha AL, Sandrim VC. Nebivolol Increases Nitric Oxide Synthase via  $\beta_3$  Adrenergic Receptor in Endothelial Cells Following Exposure to Plasma from Preeclamptic Patients. *Cells*. 2022 Mar 4;11(5):883. doi: 10.3390/cells11050883. PMID: 35269505; PMCID: PMC8909669.

2. Brehm BR, Wolf SC, Bertsch D, Klaussner M, Wesselborg S, Schüler S, Schulze-Osthoff K. Effects of nebivolol on proliferation and apoptosis of human coronary artery smooth muscle and endothelial cells. *Cardiovasc Res*. 2001 Feb 1;49(2):430-9. doi: 10.1016/s0008-6363(00)00253-4. PMID: 11164853.

### In vivo study

1. Nascimento MM, Bernardo DRD, de Bragança AC, Massola Shimizu MH, Seguro AC, Volpini RA, Canale D. Treatment with  $\beta$ -blocker nebivolol ameliorates oxidative stress and endothelial dysfunction in tenofovir-induced nephrotoxicity in rats. *Front Med (Lausanne)*. 2022 Aug 4;9:953749. doi: 10.3389/fmed.2022.953749. PMID: 35991671; PMCID: PMC9386005.

2. Naem AG, El-Naga RN, Michel HE. Nebivolol elicits a neuroprotective effect in the cuprizone model of multiple sclerosis in mice: emphasis on M1/M2 polarization and inhibition of NLRP3 inflammasome activation. *Inflammopharmacology*. 2022 Dec;30(6):2197-2209. doi: 10.1007/s10787-022-01045-4. Epub 2022 Aug 10. PMID: 35948811; PMCID: PMC9700639.

# Product data sheet



## 7. Bioactivity

### Biological target:

---

Nebivolol (R 065824) is an orally active beta receptor blocker and has the high beta(1)-receptor affinity.

### In vitro activity

---

Nebivolol inhibited accelerated haCSMC proliferation even in the presence of growth factors such as TGFbeta(1) and PDGF-BB. Nebivolol concentration-dependently induced a moderate apoptosis ( $10^{-5}$  mol/l: 23%) and a decrease of haCSMCs in the S-phase by 66%. HaECs showed comparable results.

Reference: Cardiovasc Res. 2001 Feb 1;49(2):430-9. <https://pubmed.ncbi.nlm.nih.gov/11164853/>

### In vivo activity

---

Nebivolol treatment partially recovered glomerular filtration rate, improved renal injury, normalized blood pressure and attenuated renal vasoconstriction in Wistar rats.

Reference: Front Med (Lausanne). 2022 Aug 4;9:953749. <https://pubmed.ncbi.nlm.nih.gov/35991671/>

*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.*