Ambroxol

Cat. No.: HY-B1039

CAS No.: 18683-91-5

Molecular Formula: $C_{13}H_{18}Br_2N_2O$

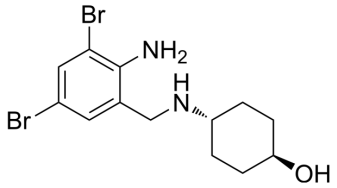
Molecular Weight: 378.1

Target: Glucosidase; Autophagy

Pathway: Metabolic Enzyme/Protease; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 200 mg/mL (528.96 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	2.6448 mL	13.2240 mL	26.4480 mL
5 mM	0.5290 mL	2.6448 mL	5.2896 mL
10 mM	0.2645 mL	1.3224 mL	2.6448 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 5% DMSO >> 95% saline
   Solubility: 5 mg/mL (13.22 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.61 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.61 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ambroxol (NA-872), an active metabolite of the proagent Bromhexine, has potent expectorant effects. Ambroxol is a glucocerebrosidase (GCase) chaperone and increases glucocerebrosidase activity. Ambroxol induces lung autophagy and has the potential for Parkinson disease and neuronopathic Gaucher disease research[1][2].

In Vivo	Ambroxol (NA-872; 1, 3, 4, 5 mM for 12 consecutive days in drinking water) results in increased brain glucocerebrosidase activity in wild-type mice, transgenic mice expressing the heterozygous L444P mutation in the murine glucocerebrosidase 1 gene, and transgenic mice overexpressing human α-synuclein[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Rep. 2021 Jul 20;36(3):109404.
- Evid-Based Compl Alt. 16 Jun 2022.

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REFERENCES

[1]. Vojo Deretic, et al. Enhancement of lung levels of antibiotics by ambroxol and bromhexine. Expert Opin Drug Metab Toxicol. 2019 Mar;15(3):213-218.

[2]. Anna Migdalska-Richards, et al. Ambroxol effects in glucocerebrosidase and α-synuclein transgenic mice. Ann Neurol. 2016 Nov;80(5):766-775.

Caution: Product has not been fully validated for medical applications. For research use only.

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