

## Product Data Sheet

Product Name: Midodrine (hydrochloride)

Cat. No.: GC11239

### Chemical Properties

Cas. No. 43218-56-0

Chemical Name 2-amino-N-[2-(2,5-dimethoxyphenyl)-2-hydroxyethyl]-acetamide, monohydrochloride

SMILES OC(CNC(CN)=O)C1=C(OC)C=CC(OC)=C1.Cl

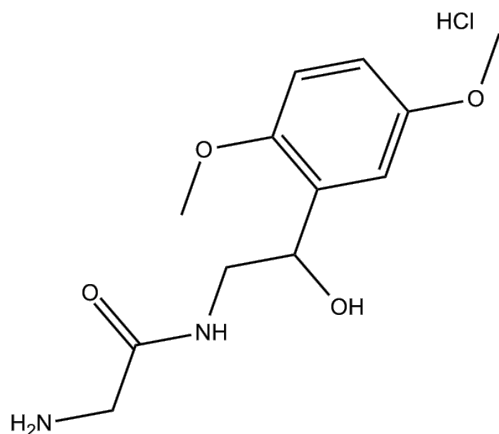
Formula  $C_{12}H_{18}N_2O_4 \cdot HCl$  M.Wt 290.7

Solubility  $\geq 14.55\text{mg/mL}$  in DMSO Storage Store at  $-20^{\circ}\text{C}$

General tips For obtaining a higher solubility, please warm the tube at  $37^{\circ}\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^{\circ}\text{C}$  for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



### Background

Ki: 2, 6.9, and 1.7  $\mu\text{M}$  for  $\alpha 1A$ ,  $\alpha 1B$ ,  $\alpha 1D$ , respectively

Midodrine is the prodrug of the  $\alpha 1$ -adrenergic receptor agonist, 1-(2',5'-dimethoxyphenyl)-2-aminoethanol.

The  $\alpha 1$ -adrenergic receptor has some general functions similar with the  $\alpha 2$ -adrenergic receptor, but

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

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also has its own specific effects.  $\alpha$ 1-receptors primarily can mediate smooth muscle contraction and have other important functions as well.

In vitro: Midodrine was identified as a prodrug forming an active metabolite, desglymidodrine, which is an  $\alpha$ 1-receptor agonist exerting its actions through activation of the alpha-adrenergic receptors of the arteriolar and venous vasculature, leading to an increased vascular tone and elevation of blood pressure [1].

In vivo: A previous study was conducted to investigate the effect of intracerebroventricular injections of midodrine on the central nervous system of the rat. It was found that midodrine could decrease body temperature and increase locomotor activity, sedation in reserpinized rats as well as the cataleptic effect of haloperidol. Midodrine could also enhance amphetamine-stimulated locomotor activity and reduce the amphetamine and apomorphine stereotypy [1].

Clinical trial: The results of a previous pilot study indicated that midodrine combination with tolvaptan could better control ascites without any hepatic or renal dysfunction. Such combination therapy controlled ascites rapidly as compared to midodrine or tolvaptan alone [2].

### References:

- [1] Kleinrok Z, Jagieo-Wójtowicz E, Oktaba-Polkowska A. Central action of intraventricularly-injected midodrine in rats. Arch Int Pharmacodyn Ther. 1980 Oct;247(2):217-33.
- [2] Rai N, Singh B, Singh A, Vijayvergiya R, Sharma N, Bhalla A, Singh V. Midodrine and tolvaptan in patients with cirrhosis and refractory or recurrent ascites: a randomised pilot study. Liver Int. 2017 Mar;37(3):406-414.

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