

# PRODUCT INFORMATION



## Benazepril-d<sub>5</sub> (hydrochloride)

Item No. 30978

**CAS Registry No.:** 1279026-26-4  
**Formal Name:** 2-(((S)-3-(((S)-1-ethoxy-1-oxo-4-(phenyl-d<sub>5</sub>)butan-2-yl)amino)-2-oxo-2,3,4,5-tetrahydro-1H-benzo[b]azepin-1-yl)acetic acid, monohydrochloride

**Synonym:** CGS 14824A-d<sub>5</sub>  
**MF:** C<sub>24</sub>H<sub>23</sub>D<sub>5</sub>N<sub>2</sub>O<sub>5</sub> • HCl  
**FW:** 466.0

**Chemical Purity:** ≥95% (Benazepril)

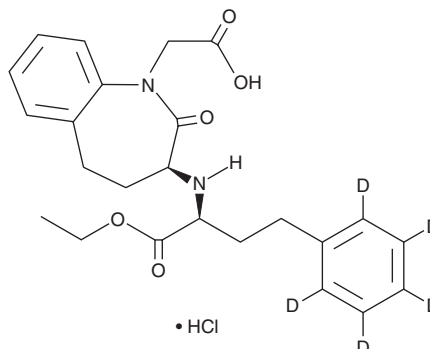
**Deuterium**

**Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤1% d<sub>0</sub>

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Benazepril-d<sub>5</sub> (hydrochloride) is intended for use as an internal standard for the quantification of benazepril (Item No. 23804) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Benazepril-d<sub>5</sub> (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the benazepril-d<sub>5</sub> (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Benazepril-d<sub>5</sub> (hydrochloride) is slightly soluble in methanol, ethanol, and DMSO.

### Description

Benazepril is a prodrug of the angiotensin converting enzyme (ACE) inhibitor benazeprilat (Item No. 21796).<sup>1</sup> It is metabolized to benazeprilat by hepatic esterases. Benazepril inhibits the *in vitro* enzymatic activity of partially purified ACE isolated from rabbit lung (IC<sub>50</sub> = 2 nM).<sup>2</sup> It decreases the triglyceride and total cholesterol levels in normotensive rats when administered at a dose of 30 mg/kg and decreases aortic atherosclerosis in cholesterol-fed rabbits when administered at a dose of 3 mg/kg per day.<sup>3</sup> Benazepril (0.1-10 mg/kg per day) reduces blood pressure in spontaneously hypertensive rats.<sup>4</sup> It also decreases proteinuria in cats with chronic kidney disease when administered at doses ranging from 0.5 to 1 mg/kg per day.<sup>5</sup> Formulations containing benazepril have been used to treat hypertension, congestive heart failure, and chronic kidney disease in both human and veterinary medicine.

### References

1. Toutain, P.L. and Lefèbvre, H.P. *J. Vet. Pharmacol. Ther.* **27(6)**, 515-525 (2004).
2. Ksander, G.M., Erion, M., Yuan, A.M., *et al. J. Med. Chem.* **37(12)**, 1823-1832 (1994).
3. Yamamoto, S., Takemori, E., Hasegawa, Y., *et al. Arzneimittelforschung* **41(9)**, 913-923 (1991).
4. Watthey, J.W.H., Stanton, J.L., Desai, M., *et al. J. Med. Chem.* **28(10)**, 1511-1516 (1985).
5. King, J.N., Gunn-Moore, D.A., Tasker, S., *et al. J. Vet. Intern. Med.* **20(5)**, 1054-1064 (2006).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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