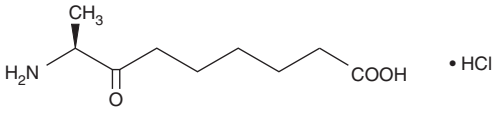
PRODUCT INFORMATION

8(S)-Amino-7-Oxononanoic Acid (hydrochloride)

Item No. 10007542

CAS Registry No.: 177408-65-0
Formal Name: 8-amino-7-oxo-nonanoic acid, monohydrochloride
Synonyms: 7-keto-8(S)-Aminopelargonic Acid, 8(S)-KAPA
MF: $C_9H_{17}NO_3 \bullet HCl$
FW: 223.7
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

8(S)-Amino-7-oxononanoic acid (8(S)-KAPA) (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the 8(S)-KAPA (hydrochloride) in the solvent of choice, which should be purged with an inert gas. 8(S)-KAPA (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 8(S)-KAPA (hydrochloride) in these solvents is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 8(S)-KAPA (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 8(S)-KAPA (hydrochloride) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

8(S)-KAPA is a vitamer of the carboxylase coenzyme biotin (Item No. 22582).[1] It increases proliferation in *S. cerevisiae* in a concentration-dependent manner. 8(S)-KAPA is an intermediate in the biosynthesis of biotin in microbes.[2] It racemizes in culture media in a pH-dependent manner, with a higher racemization rate under very low (pH <2), physiological, and basic pH conditions. 8(S)-KAPA, but not 8(R)-KAPA, is a substrate for *E. coli* and *M. tuberculosis* 7,8-diaminopelargonic acid aminotransferase (DAPA AT), which leads to accumulation of 8(R)-KAPA in M. tuberculosis cultures after exogenous application of racemic KAPA.

References

1. Lucet, D., Le Gall, T., Mioskowski, C., *et al.* First synthesis of both enantiomers of the biotin vitamer 8-amino-7-oxopelargonic acid. *Tetrahedron-Asymmetr.* **7(4)**, 985-988 (1996).
2. Mann, S., Colliandre, L., Labesse, G., *et al.* Inhibition of 7,8-diaminopelargonic acid aminotransferase from *Mycobacterium tuberculosis* by chiral and achiral anologs of its substrate: biological implications. *Biochimie* **91(7)**, 826-834 (2009).

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