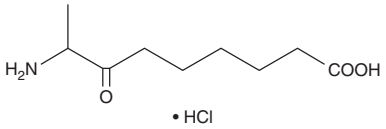
PRODUCT INFORMATION

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

Item No. 40973

CAS Registry No.: 21286-96-4
Formal Name: 8-amino-7-oxo-nonanoic acid, monohydrochloride
Synonym: (±)8-KAPA
MF: $C_9H_{17}NO_3$ • HCl
FW: 223.7
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Synthetic



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

Laboratory Procedures

(±)8-Amino-7-oxononanoic acid ((±)8-KAPA) (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the ((±)8-KAPA) (hydrochloride) in the solvent of choice, which should be purged with an inert gas. ((±)8-KAPA) (hydrochloride) is slightly soluble (0.1-1 mg/ml) in ethanol and sparingly soluble (1-10 mg/ml) in DMSO.

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-KAPA) (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. ((±)8-KAPA) (hydrochloride) is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

((±)8-KAPA) is a racemic mixture of 8(R)-KAPA and the vitamer of biotin 8(S)-KAPA.[1,2] It is biosynthesized as the 8(S) form but racemizes in culture media in a pH-dependent manner, with a higher racemization rate under very low (pH <2), physiological, and basic pH conditions.[2] 8(S)-KAPA increases proliferation in *S. cerevisiae* in a concentration-dependent manner and is an intermediate in the biosynthesis of biotin (Item No. 22582) in microbes. 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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM