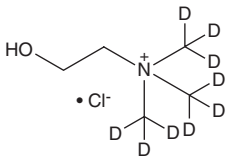
PRODUCT INFORMATION

Choline-d_9 (chloride)

Item No. 36454

CAS Registry No.: 61037-86-3
Formal Name: 2-hydroxy-N,N,N-tri(methyl-d_3)-ethanaminium, monochloride
MF: $C_5H_5D_9NO \bullet Cl$
FW: 148.7
Chemical Purity: ≥98% (Choline)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_9); ≤1% d_0
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

Choline-d_9 (chloride) is intended for use as an internal standard for the quantification of choline (Item No. 31178) 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).

Choline-d_9 (chloride) is supplied as a solid. A stock solution may be made by dissolving the choline-d_9 (chloride) in the solvent of choice, which should be purged with an inert gas. Choline-d_9 (chloride) is soluble in the organic solvent ethanol at a concentration of approximately 2 mg/ml. Choline-d_9 (chloride) is also slightly soluble in DMSO.

Description

Choline is an essential nutrient with roles in liver, neurological, hematological, and skeletal muscle homeostasis.[1-4] It is a precursor in the biosynthesis of membrane phospholipids, such as phosphatidylcholine, which facilitate cell signaling and transport across the membrane, and a precursor to the neurotransmitter acetylcholine. Choline is required for hepatic lipid transport.[1] Perinatal administration of choline (18.8 mg/kg) improves prenatal alcohol exposure-induced cognitive deficits in rats.[2] Choline (13 mg/animal per day) improves motor coordination and behavioral deficits in a mouse model of Rett syndrome, as well as improves deficits in recognition memory induced by early-life iron deficiency in rats when administered in the drinking water at a concentration of 5 ppm.[3] Deficiencies in choline intake are positively correlated with muscle wasting, and dietary administration of choline (1,000 mg/kg) increases leg and breast muscle protein content in broiler chickens.[4]

References

1. Sanders, L.M. and Zeisel, S.H. Choline: Dietary requirements and role in brain development. *Nutr. Today* **42(4)**, 181-186 (2007).
2. Thomas, J.D., Garrison, M., and O'Neill, T.M. Perinatal choline supplementation attenuates behavioral alterations associated with neonatal alcohol exposure in rats. *Neurotoxicol. Teratol.* **26(1)**, 35-45 (2004).
3. Derbyshire, E. and Obeid, R. Choline, neurological development and brain function: A systematic review focusing on the first 1000 days. *Nutrients* **12(6)**, 1731 (2020).
4. Moretti, A., Paoletta, M., Liguori, S., *et al.* Choline: An essential nutrient for skeletal muscle. *Nutrients* **12(7)**, E2144 (2020).

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