

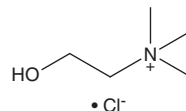
# PRODUCT INFORMATION



## Choline (chloride)

Item No. 31178

**CAS Registry No.:** 67-48-1  
**Formal Name:** 2-hydroxy-N,N,N-trimethyl-ethanaminium, monochloride  
**MF:** C<sub>5</sub>H<sub>14</sub>NO • Cl  
**FW:** 139.6  
**Purity:** ≥95%  
**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 (chloride) is supplied as a solid. A stock solution may be made by dissolving the choline (chloride) in the solvent of choice, which should be purged with an inert gas. Choline (chloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of choline (chloride) in ethanol is approximately 25 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Choline (chloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, choline (chloride) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Choline (chloride) has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Choline is an essential nutrient with roles in liver, neurological, hematological, and skeletal muscle homeostasis.<sup>1-4</sup> 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.<sup>1</sup> Perinatal administration of choline (18.8 mg/kg) improves prenatal alcohol exposure-induced cognitive deficits in rats.<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup>

### References

1. Moretti, A., Paoletta, M., Liguori, S., *et al.* Choline: An Essential Nutrient for Skeletal Muscle. *Nutrients*. **12(7)**, E2144 (2020).
2. Derbyshire, E., Obeid, R. Choline. Neurological Development and Brain Function: A Systematic Review Focusing on the First 1000 Days. *Nutrients*. **12(6)**, 1731 (2020).
3. Sanders, L.M., Zeisel, S.H. Choline: Dietary Requirements and Role in Brain Development. *Nutr. Today*. **42(4)**, 181-186 (2007).
4. Thomas, J.D., Garrison, M., O'Neill, T.M. Perinatal choline supplementation attenuates behavioral alterations associated with neonatal alcohol exposure in rats. *Neurotoxicol. Teratol.* **26(1)**, 35-45 (2004).

#### 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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