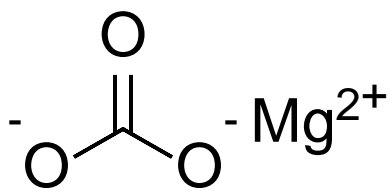


Product data sheet



MedKoo Cat#: 581312 Name: Magnesium carbonate CAS: 546-93-0 Chemical Formula: CMgO_3 Exact Mass: 83.9698 Molecular Weight: 84.313	
Product supplied as: Powder	
Purity (by HPLC): $\geq 98\%$	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Magnesium carbonate is a chemical used in the production of magnesium oxide by calcining. Amorphous magnesium carbonate nanoparticles with strong stabilizing capability for amorphous ibuprofen. improved apparent solubility and enhanced bioavailability of drugs.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	11.86 mL	59.30 mL	118.61 mL
5 mM	2.37 mL	11.86 mL	23.72 mL
10 mM	1.19 mL	5.93 mL	11.86 mL
50 mM	0.24 mL	1.19 mL	2.37 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Sugawara S, Fujiya W, Kagi H, Yamaguchi A, Hashizume K. Heat-Induced Dolomitization of Amorphous Calcium Magnesium Carbonate in a CO_2 -Filled Closed System. ACS Omega. 2022 Nov 28;7(49):44670-44676. doi: 10.1021/acsomega.2c03258. PMID: 36530237; PMCID: PMC9753508.
- Yang L, Qu J, Gong D, Wang Z, Wang R, Wan L. Solventing out crystallization-basic magnesium carbonate precipitation for thorough phosphorus removal from ammonium tungstate solution. Front Chem. 2022 Aug 17;10:976376. doi: 10.3389/fchem.2022.976376. PMID: 36059872; PMCID: PMC9428244.

In vivo study

- Zardán Gómez de la Torre T, Lindmark T, Cheung O, Bergström C, Strømme M. Bioavailability of Celecoxib Formulated with Mesoporous Magnesium Carbonate-An In Vivo Evaluation. Molecules. 2022 Sep 21;27(19):6188. doi: 10.3390/molecules27196188. PMID: 36234733; PMCID: PMC9570901.

7. Bioactivity

Biological target:

Magnesium carbonate is a chemical used in the production of magnesium oxide by calcining.

Product data sheet



In vitro activity

This study reports a method to synthesize dolomite [$\text{CaMg}(\text{CO}_3)_2$] from amorphous calcium magnesium carbonate (ACMC) via solid-state transformation. When ACMC is heated in air, it does not crystallize into dolomite but decomposes into Mg calcite, magnesium oxide, and CO_2 . Hence, this study heated ACMC in a closed system filled with CO_2 gas ($p\text{CO}_2 > 1.2$ bar at 420°C) and produced submicron-sized dolomite. Single-phase dolomite was obtained after dissolving impurities in the run products, such as northupite [$\text{Na}_3\text{Mg}(\text{CO}_3)_2\text{Cl}$] and eitelite [$\text{Na}_2\text{Mg}(\text{CO}_3)_2$], in water.

Reference: ACS Omega. 2022 Nov 28;7(49):44670-44676. <https://pubmed.ncbi.nlm.nih.gov/36530237/>

In vivo activity

In the present study, celecoxib, a poorly soluble drug, was successfully loaded into mesoporous magnesium carbonate (MMC) in its amorphous state via a solvent evaporation method. The MMC formulation was evaluated in vitro and in vivo in terms of oral bioavailability. The two celecoxib formulations were orally administered in male rats (average of $n = 6$ animals per group), and blood samples for plasma were taken from all animals at different time points after administration. The results showed that MMC may be a promising drug delivery excipient for increasing the bioavailability of compounds with solubility-limited absorption.

Reference: Molecules. 2022 Sep 21;27(19):6188. <https://pubmed.ncbi.nlm.nih.gov/36234733/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.