# **Product data sheet**



MedKoo Cat#: 526654				
Name: ML-098				
CAS#: 878978-76-8				
Chemical Formula: C <sub>19</sub> H <sub>19</sub> NO <sub>3</sub>				
Exact Mass: 309.1365				
Molecular Weight: 309.365				
Product supplied as:	Powder			
Purity (by HPLC):	≥ 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		



#### 1. Product description:

ML-098, also known as CID-7345532, is an activator of the GTP-binding protein Rab7 (EC50 = 77.6 nM). ML098 (CID-7345532) functions by increasing the affinity of the GTPases for guanine nucleotides, leading to the hypothesis that these activators interact with GTPases bind to an allosteric binding site localized between switch regions I and II.

#### 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
DMSO	53.0	171.45

#### 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.23 mL	16.16 mL	32.32 mL
5 mM	0.65 mL	3.23 mL	6.46 mL
10 mM	0.32 mL	1.62 mL	3.23 mL
50 mM	0.06 mL	0.32 mL	0.65 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

1. Li B, Lv L, Li W. 1,25-Dihydroxy vitamin D3 inhibits the Ras-MEK-ERK pathway and regulates proliferation and apoptosis of papillary thyroid carcinoma. Steroids. 2020 Jul;159:108585. doi: 10.1016/j.steroids.2020.108585. Epub 2020 Jan 23. PMID: 31982425.

Surviladze Z, Ursu O, Miscioscia F, Curpan R, Halip L, Bologa C, Oprea T, Waller A, Strouse J, Salas V, Wu Y, Edwards B, Wandinger-Ness A, Sklar L. Three small molecule pan activator families of Ras-related GTPases. 2009 May 18 [updated 2010 Sep 2].
In: Probe Reports from the NIH Molecular Libraries Program [Internet]. Bethesda (MD): National Center for Biotechnology Information (US); 2010–. PMID: 21433375.

In vivo study

TBD

### 7. Bioactivity

Biological target:

ML-098 (CID-7345532) is an activator of the GTP-binding protein Rab7 with an EC50 of 77.6 nM. The papillary thyroid carcinoma cell line TPC-1 was cultured, and the cells were divided into control group, the 1,25-(OH)2D3 group, and the 1,25-(OH)2D3 + ML-098 (Ras agonist) group.

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In vitro activity

The objective of this study was to explore the effects of 1,25-dihydroxy vitamin D3 [1,25-(OH)2D3] on the proliferation and apoptosis of papillary thyroid carcinoma and to investigate its possible mechanism. Compared with the drug group, the cloning and migration biological activity of cells in the 1,25-(OH)2D3 + ML-098 group was significantly enhanced (p < 0.05). The assay results showed that 1,25-(OH)2D3 could reduce the activity of the Ras-MEK-ERK pathway. To further verify this effect, we added Ras agonist (ML-098) treatment and observed the above indicators again. The ability of cell proliferation, colony formation, and migration in 1,25-(OH)2D3 + ML-098 group was increased in contrast to the 1,25-(OH)2D3 group, and the number of apoptotic cells was decreased. The expression of Ki67 protein was increased, while the expression level of Ras was upregulated in 1,25-(OH)2D3 + ML-098 group than in the 1,25-(OH)2D3 group, the phosphorylation level of p-ERK1/2 and p-MEK was increased and the effect of 1,25-(OH)2D3 on the Ras-MEK-ERK pathway was reversed by ML-098 (p < 0.05).

Steroids. 2020 Jul;159:108585. https://pubmed.ncbi.nlm.nih.gov/31982425/

In vivo activity

TBD

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.