Melittin TFA

Cat. No.: HY-P0233A

Molecular Formula: $C_{132}H_{230}F_3N_{39}O_{33}$

Molecular Weight: 2960.48

Sequence: Gly-Ile-Gly-Ala-Val-Leu-Lys-Val-Leu-Thr-Thr-Gly-Leu-Pro-Ala-Leu-Ile-Ser-Trp-Ile-Lys-Arg-Lys-Arg-Gln-Gln-NH2 GIGAVLKVLTTGLPALISWIKRKRQQ-NH_2 (TFA salt)

Sequence Shortening: GIGAVLKVLTTGLPALISWIKRKRQQ-NH2

Target: Phospholipase

Pathway: Metabolic Enzyme/Protease

Storage: Sealed storage, away from moisture and light
Powder -80°C 2 years
-20°C 1 year
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)

SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 50 mg/mL (16.89 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.3378 mL	1.6889 mL	3.3778 mL
5 mM	0.0676 mL	0.3378 mL	0.6756 mL
10 mM	0.0338 mL	0.1689 mL	0.3378 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
Solubility: 50 mg/mL (16.89 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Melittin TFA is a PLA_2 activator, stimulates the activity of the low molecular weight PLA_2, while it does not the increase activity of the high molecular weight PLA_2[1][2].

IC_{50} & Target

PLA_2[1]

In Vitro

Melittin, an immunologically related PLA_2 stimulating peptide from bee venom, increases the activity of the high molecular weight enzyme[1]. Melittin is a cytotoxic peptide from bee venom. Melittin exhibits toxicity against both A2780CR and A2780 cells, with IC_{50} values of 4.5 and 6.8 μg/mL, respectively. Melittin has natural anti-bacterial, anti-viral, and anti-inflammatory

properties. It has also been shown to have diverse anticancer effects in several different cancer cell lines including those of gastric, breast, ovarian, liver, prostate, cervical, and lung origins. The mechanisms by which Melittin, an amphipathic haemolytic peptide, exerts its potential anticancer effects include inhibition of cell proliferation, induction of apoptosis, and direct necrosis. Melittin can also prevent EGF-induced cell invasion through its inhibition of the PI3K/Akt/mTOR signaling pathway, but this is primarily related to breast cancer cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Exp Med. 2022 May 2;219(5):e20212414.
- Cancer Lett. 2022 May 28;534:215615.
- FASEB J. 2020 Nov;34(11):14892-14904.
- Front Microbiol. 2020 Jul 31;11:1720.
- Free Radic Res. 2022 Oct 4;1-26.

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REFERENCES

[1]. Steiner MR, et al. Responses of purified phospholipases A2 to phospholipase A2 activating protein (PLAP) and Melittin. Biochim Biophys Acta. 1993 Feb 10;1166(1):124-30.

[2]. Alonezi S, et al. Metabolomic Profiling of the Effects of Melittin on Cisplatin Resistant and Cisplatin Sensitive Ovarian Cancer Cells Using Mass Spectrometry and Biolog Microarray Technology. Metabolites. 2016 Oct 13;6(4). pii: E35.

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