Product Data Sheet

Product Name: CIGB-552 TFA
Cat. No.: GC81548

Chemical Properties

Cas. No.			
Formula	$C_{131}H_{198}N_{38}O_{24}{\cdot}xC_2HF_3O_2$	M.Wt	2689.21
Solubility		Storage	Sealed storage, away from moisture
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Ac-His-Ala-Arg-Ile-Lys-{d-Pro}-Thr-Phe-
Arg-Arg-{d-Leu}-Lys-Trp-Lys-Tyr-Lys-
Gly-Lys-Phe-Trp (TFA salt)

Background

CIGB-552 TFA is a cell-penetrating peptide with anti-tumor properties with the IC_{50} of 23 μM in H460 cells. CIGB-552 TFA can increase the level of protein COMMD1. CIGB-552 TFA significantly inhibits the NF-κB signaling pathway. CIGB-552 TFA can promote apoptosis of the tumor cells. CIGB-552 TFA can induce the accumulation of reactive oxygen species (ROS) in tumor cells. CIGB-552 TFA

has anti-inflammatory and anti-angiogenic effects. CIGB-552 TFA can be used for the research of the lung cancer and colon cancer [1] [2] [3] [4].

In Vivo, CIGB-552 TFA (1 mg/kg; s.c.; three times a week; for three weeks) significantly inhibits tumor growth in the lung cancer miceand prolongs survival without causing significant toxicity[2]. CIGB-552 TFA (0.2-1.4 mg/kg; s.c.; two times a week; for two weeks) significantly inhibits tumor growth in mice with colon cancer and has anti angiogenic effects[4].

In Vitro, CIGB-552 TFA (20-60 μM, 5 h) can increase the protein content of the anti-tumor related protein COMMD1[1]. CIGB-552 TFA (25 μM, 0-12 h) promotes the ubiquitination degradation of RelA and inhibits NF-κB signaling in H460 cells[1]. CIGB-552 TFA (25 μM, 0-24 h) can increase the level of pro apoptotic proteins and reduce the level of anti apoptotic proteins in H460 cells[1]. CIGB-552 TFA (25 μM, 24-48 h) can induce apoptosis in lung cancer cells[1]. CIGB-552 TFA (25 μM, 8 h) reduces cellular antioxidant capacity, leading to protein and lipid oxidative damage in H460 cells [1]. CIGB-552 TFA (37.5 μM, 1 h) induces the accumulation of reactive oxygen species (ROS) by inhibiting SOD1 activity, selectively killing tumor cells[2]. CIGB-552 TFA (75-150 μM, 24 h) can significantly inhibit TNF-α-induced NF-κB activation[3]. CIGB-552 TFA (2.5-25 μM, 24 h) exerts anti angiogenic effects by inhibiting hypoxia induced HIF-1 activation through COMMD1[3].

References:
[1]. Fernández Massó JR, et al. The Antitumor Peptide CIGB-552 Increases COMMD1 and Inhibits Growth of Human Lung Cancer Cells. J Amino Acids. 2013;2013:251398.
[2]. Gomez Rodriguez Y, et al. Synergic effect of anticancer peptide CIGB-552 and Cisplatin in lung cancer models. Mol Biol Rep. 2022 Apr;49(4):3197-3212.
[3]. Daghero H, et al. The Anticancer Peptide CIGB-552 Exerts Anti-Inflammatory and Anti-Angiogenic Effects through COMMD1. Molecules. 2020 Dec 31;26(1):152.
[4]. Vallespí MG, et al. Antitumor efficacy, pharmacokinetic and biodistribution studies of the anticancer peptide CIGB-552 in mouse models. J Pept Sci. 2014 Nov;20(11):850-9.