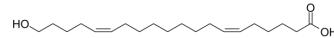


20-HEDE

Cat. No.:	HY-101527		
CAS No.:	240427-90-1		
Molecular Formula:	$C_{20}H_{36}O_3$		
Molecular Weight:	324.5		
Target:	Others		
Pathway:	Others		
Storage:	Pure form	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month



BIOLOGICAL ACTIVITY

Description	20-HEDE (WIT 002) is an antagonist of 20-hydroxyeicosatetraenoic acid (20-HETE).
IC ₅₀ & Target	20-HEDE (WIT 002) ^[1] .
In Vitro	ω -hydroxylation activity toward arachidonic acid is high in A549 cells, thus, A549 cells are treated with HET0016 or WIT 002 in the invasion assays, and both of them significantly decrease invasion ^[2] . WIT 002 inhibits proliferation of 786-O and 769-P renal adenocarcinoma cells, but HET0016 and WIT 002 fail to inhibit proliferation of normal renal epithelial cells RPTC ^{[2][3]} . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The effect of the 20-HETE antagonist, WIT 002 on the growth of 786-O clear cell renal carcinoma is assessed in ectopic mouse model of renal tumor. The growth of tumors is significantly suppressed by WIT 002 administered daily to athymic nude mice implanted subcutaneously with cells 786-O. Tumor growth is inhibited by 84%±128%. It is of note that in these experiments WIT 002 treatment start only after the tumor is seeded for 7-14 days and is relatively large 0.1 cm. Thus, WIT 002 is effective at arresting the growth of a fairly advanced tumor ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay ^{[2][3]}	Human NSCLC cell lines (e.g A549) are seeded onto the upper well of the chamber. Subsequently, serum-free medium with HET0016 (10 μ M), WIT002 (10 μ M), WIT003 (0.01, 0.1, 1 μ M), or ethanol as a control is added to the upper chamber, while the lower well is filled to the top (500 μ L) with RPMI-1640 containing 5% fetal calf serum (FCS) as a chemoattractant. Cells are allowed to migrate for 5 h. Cells that have invaded to the bottom surface of the filter are counted with an ocular micrometer in a blinded manner, counting a minimum of 10 high-powered fields (HPF) ^[2] . Human renal cell adenocarcinoma lines (RPTC) 786-O or 769-P cells are plated and next day (0 hrs) transferred to serum-free medium containing either EGF or ET-1. Cells are exposed either to 10 μ M WIT002 or vehicle. Cell counting is performed at the day of transfer to serum free medium (0 hrs) and 24, 48 and 72 hrs thereafter. Medium is changed to fresh containing mitogens and drugs every 24 hrs. Data presented are characteristic experiment from at least two separate experiments, each performed in triplicate ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration ^[3]	Mice ^[3]

Experiments are carried out on 6-week immunodeficient athymic nude mice weighing 20-26 g. Animals are acclimated for 1 week prior to injection with renal cell carcinoma. Immediately before each implantation, the cells are trypsinized, counted and resuspended in 10% serum containing RPMI media. The concentration of cells is adjusted to 40 millions/mL and 4 million cells/animal are injected subcutaneously. The cells are allowed to grow for 7-15 days until the size of the tumors reach approximately 0.1 cm³. The mice then receive daily subcutaneous injection (s.c.) injections of WIT 002 (10 mg/kg/day in 200 µL) in an isotonic NaPO₄ buffer (pH 9.0) or vehicle (0.1 M NaPO₄ solution pH 9.0). The diameter of the tumor is measured on every 3-4 days for 2 weeks using precision calipers. At the end of the experiment the mice are euthanized with CO₂ and the tumors were excised to confirm the diameter measurements^[3].

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

CUSTOMER VALIDATION

- Research Square Preprint. 2023 Apr 13.
- Chinese Herbal Medicines. 11 (2019) 177-184.

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REFERENCES

- [1]. Ming Yua . et al. Effects of a 20-HETE antagonist and agonists on cerebral vascular tone. Eur J Pharmacol. 2004 Feb 23;486(3):297-306.
- [2]. Wei Yu, et al. Cytochrome P450 ω -hydroxylase promotes angiogenesis and metastasis by upregulation of VEGF and MMP-9 in non-small cell lung cancer. Cancer Chemother Pharmacol. 2011 Sep; 68(3): 619-29.
- [3]. Anna Alexanian, et al. Down-regulation of 20-HETE Synthesis and Signaling Inhibits Renal Adenocarcinoma Cell Proliferation and Tumor Growth. Anticancer Res. 2009 October ; 29(10): 3819-3824.

Caution: Product has not been fully validated for medical applications. For research use only.

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