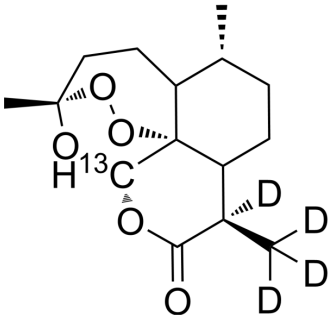
Artemisinin-$^{13}C,d_4$

Cat. No.:	HY-B0094S3
Molecular Formula:	$C_{14}{}^{13}CH_{18}D_4O_5$
Molecular Weight:	287.35
Target:	Ferroptosis; Akt; Parasite; HCV; Isotope-Labeled Compounds
Pathway:	Apoptosis; PI3K/Akt/mTOR; Anti-infection; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Artemisinin-$^{13}C,d_4$ is ^{13}C and deuterated labeled Artemisinin (HY-B0094). Artemisinin (Qinghaosu), a sesquiterpene lactone, is an anti-malarial agent isolated from the aerial parts of Artemisia annua L. plants[1]. Artemisinin inhibits AKT signaling pathway by decreasing pAKT in a dose-dependent manner. Artemisinin reduces cancer cell proliferation, migration, invasion, tumorigenesis and metastasis and has neuroprotective effects[2].
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. Artemisinin (Qinghaosu) (25 or 50 μM; 24 hours) concentration-dependently suppresses Aβ25-35 induced cytotoxicity in PC12 cells[2]. Artemisinin (1-100 μM; 24 hours) selectively inhibits cancer cell growth in a dose-dependent manner with IC_{50} values of 31.30 ± 0.73 μM in UMRC-2 cells and 23.97 ± 0.92 CAKI-2 cells[3]. Artemisinin (25, 50 μM; 24 hours) suppresses the phosphorylation of AKT in UMRC-2 and CAKI-2 cells in a dose-dependent manner[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Artemisinin (gavage; 20 mg/kg/day; for two weeks) suppresses UMRC-2 xenograft tumor growth[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Lin SP, et al. Artemisinin Prevents Glutamate-Induced Neuronal Cell Death Via Akt Pathway Activation. Front Cell Neurosci. 2018 Apr 20;12:108.

[2]. Zeng Z, et al. Artemisinin protects PC12 cells against β-amyloid-induced apoptosis through activation of the ERK1/2 signaling pathway. Redox Biol. 2017 Apr 4;12:625-633.

[3]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

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