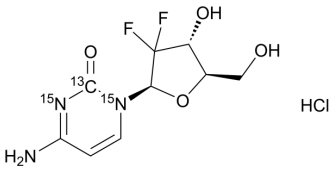
Gemcitabine-13C,15N2 hydrochloride

Cat. No.:	HY-B0003S
CAS No.:	2757566-59-7
Molecular Formula:	$C_8{}^{13}CH_{12}ClF_2N^{15}N_2O_4$
Molecular Weight:	302.64
Target:	Apoptosis; Nucleoside Antimetabolite/Analog; DNA/RNA Synthesis; Autophagy
Pathway:	Apoptosis; Cell Cycle/DNA Damage; Autophagy
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Gemcitabine-$^{13}C,^{15}N_2$ (hydrochloride) is the ^{13}C and ^{15}N labeled Gemcitabine hydrochloride[1]. Gemcitabine Hydrochloride (LY 188011 Hydrochloride) is a pyrimidine nucleoside analog antimetabolite and an antineoplastic agent. Gemcitabine Hydrochloride inhibits DNA synthesis and repair, resulting in autophagyand apoptosis[2][3].
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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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

[2]. Wang H, et al. Enhanced efficacy of Gemcitabine by indole-3-carbinol in pancreatic cell lines: the role of human equilibrativenucleoside transporter 1. Anticancer Res. 2011 Oct;31(10):3171-80

[3]. Gagnadoux F, et al. Safety of pulmonary administration of gemcitabine in rats. J Aerosol Med. 2005 Summer18(2):198-206

[4]. Lou M, et al. Physical interaction between human ribonucleotide reductase large subunit and thioredoxin increases colorectal cancer malignancy. J Biol Chem. 2017 Jun 2292(22):9136-9149.

[5]. Yip-Schneider MT, et al. Dimethylaminoparthenolide and Gemcitabine: a survival study using a genetically engineered mouse model of pancreatic cancer. BMC Cancer. 2013 Apr 1713:194.

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