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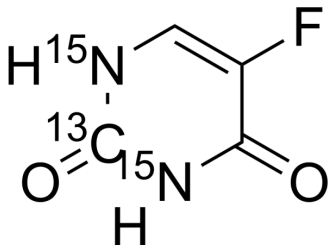
5-Fluorouracil-13C,15N2

Cat. No.:	HY-90006S1
CAS No.:	1189423-58-2
Molecular Formula:	$C_3{}^{13}CH_3F^{15}N_2O_2$
Molecular Weight:	133.06
Target:	Apoptosis; Nucleoside Antimetabolite/Analog; HIV; Endogenous Metabolite
Pathway:	Apoptosis; Cell Cycle/DNA Damage; Anti-infection; Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description	5-Fluorouracil-$^{13}C,^{15}N_2$ is the ^{13}C and ^{15}N labeled 5-Fluorouracil[1]. 5-Fluorouracil (5-FU) is an analogue of uracil and a potent antitumor agent. 5-Fluorouracil affects pyrimidine synthesis by inhibiting thymidylate synthetase thus depleting intracellular dTTP pools. 5-Fluorouracil induces apoptosis and can be used as a chemical sensitizer[2][3]. 5-Fluorouracil also inhibits HIV[4].
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.

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[3]. McQuade RM, et al. Gastrointestinal dysfunction and enteric neurotoxicity following treatment with anticancer chemotherapeutic agent 5-fluorouracil. Neurogastroenterol Motil. 2016 Jun 28.

[4]. Zeng Q, et al. Knockdown of NFBD1/MDC1 enhances chemosensitivity to NSC 119875 or 5-fluorouracil in nasopharyngeal carcinoma CNE1 cells. Mol Cell Biochem. 2016 Jul418(1-2):137-46.

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[6]. Jones DH, et al. Ten-Year and Beyond Follow-up After Treatment With Highly Purified Liquid-Injectable Silicone for HIV-Associated Facial Lipoatrophy: A Report of 164 Patients. Dermatol Surg. 2019 Jul45(7):941-948.

[7]. Snyder SM, et al. Initial Experience with Topical Fluorouracil for Treatment of HIV-Associated Anal Intraepithelial Neoplasia. J Int Assoc Physicians AIDS Care (Chic). 201110(2):83-88.

[8]. Pek Yee Lum, et al. Discovering modes of action for therapeutic compounds using a genome-wide screen of yeast heterozygotes. Cell. 2004 Jan 9116(1):121-37.

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

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