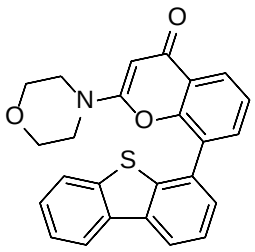
Product data sheet

MedKoo Cat#: 406320 Name: NU7441 CAS#: 503468-95-9 Chemical Formula: $C_{25}H_{19}NO_3S$ Exact Mass: 413.1086 Molecular Weight: 413.49	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
NU7441, also known as KU-57788, is a highly potent and selective DNA-PK inhibitor (IC50=14 nM), exhibiting ATP-competitive inhibition kinetics. NU7441 increased the cytotoxicity of ionizing radiation and etoposide in SW620, LoVo, and V3-YAC cells but not in V3 cells, confirming that potentiation was due to DNA-PK inhibition. NU7441 substantially retarded the repair of ionizing radiation-induced and etoposide-induced DSB.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	14.0	33.9

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.42 mL	12.09 mL	24.18 mL
5 mM	0.48 mL	2.42 mL	4.84 mL
10 mM	0.24 mL	1.21 mL	2.42 mL
50 mM	0.05 mL	0.24 mL	0.48 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Yang C, Wang Q, Liu X, Cheng X, Jiang X, Zhang Y, Feng Z, Zhou P. NU7441 Enhances the Radiosensitivity of Liver Cancer Cells. Cell Physiol Biochem. 2016;38(5):1897-905. doi: 10.1159/000445551. Epub 2016 May 9. PMID: 27160694.

In vivo study

1. Zhao Y, Thomas HD, Batey MA, Cowell IG, Richardson CJ, Griffin RJ, Calvert AH, Newell DR, Smith GC, Curtin NJ. Preclinical evaluation of a potent novel DNA-dependent protein kinase inhibitor NU7441. Cancer Res. 2006 May 15;66(10):5354-62. doi: 10.1158/0008-5472.CAN-05-4275. PMID: 16707462.

7. Bioactivity
Biological target: KU-57788 (NU7441) is a DNA-PK inhibitor with an IC50 of 14 nM.

In vitro activity

The effect of NU7441 on the growth of liver cancer HepG2 cells treated with different doses of NU7441, from 0.5 to 10 μM was investigated (Fig. 1). NU7441 had an inhibitory effect on cell growth, indicating the potential application of this medicine to kill the

cancer cells. Moreover, this inhibition was dose- and time-dependent, with a maximal inhibitory effect for 72 h at a dosage of 10 μM NU7441.

Reference: Cell Physiol Biochem. 2016;38(5):1897-905. https://www.karger.com/Article/FullText/445551

In vivo activity

Mice bearing SW620 tumor xenografts were treated with etoposide phosphate alone and in combination with NU7441 (Fig. 5B). Tumors in control mice reached four times their starting volume (RTV4) at a median time of 5.6 days (i.e., time to RTV4 = 5.6 days). Treatment with etoposide phosphate alone caused a tumor growth delay of 2.7 days (time to RTV4 = 8.3 days), which was extended to 5.4 days (time to RTV4 = 11 days, P = 0.0159 compared with etoposide alone) by coadministration of NU7441. Thus, NU7441 enhanced etoposide phosphate efficacy by 100%.

Reference: Cancer Res. 2006 May 15;66(10):5354-62. https://cancerres.aacrjournals.org/content/66/10/5354.long