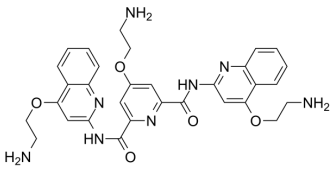
Pyridostatin

Cat. No.:	HY-15176
CAS No.:	1085412-37-8
Molecular Formula:	$C_{31}H_{32}N_8O_5$
Molecular Weight:	596.64
Target:	G-quadruplex
Pathway:	Cell Cycle/DNA Damage
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Pyridostatin (RR82) is a G-quadruplex DNA stabilizing agent (K_d=490 nM). Pyridostatin promotes growth arrest in human cancer cells by inducing replication- and transcription-dependent DNA damage. Pyridostatin targets the proto-oncogene Src. Pyridostatin reduced SRC protein levels and SRC-dependent cellular motility in human breast cancer cells[1][2].
IC_{50} & Target	Kd: 490 nM (G-quadruplexe)[1]
In Vitro	Pyridostatin (RR82) (10 μM; 48 hours) induces cell cycle arrest[1]. Pyridostatin is a very selective G-quadruplex DNA-binding small molecule designed to form a complex with and stabilize G-quadruplex structure. Pyridostatin causes neurite retraction, synaptic loss, and dose-dependent neuronal death. In cultured primary neurons, Pyridostatin induces the formation of DNA DSBs. Remarkably, Pyridostatin (1-5 μM, overnight) downregulates the BRCA1 protein, a protein that guards and repairs the neuronal genome, at the transcriptional level[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Over 60 different cancer cell lines
Concentration:	10 μM
Incubation Time:	48 hours
Result:	Predominantly accumulated in the G2 phase of the cell cycle over 60 different cancer cell lines.

CUSTOMER VALIDATION

- J Hepatol. 2020 Aug;73(2):371-382.
- Nat Commun. 2022 Sep 16;13(1):5456.
- Nat Commun. 2022 Mar 17;13(1):1444.
- J Am Chem Soc. 2021 Dec 6.
- Nucleic Acids Res. 2023 Sep 22;gkad759.

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REFERENCES

[1]. Rodriguez R, et al. Small-molecule-induced DNA damage identifies alternative DNA structures in human genes. Nat Chem Biol. 2012;8(3):301-310. Published 2012 Feb 5.

[2]. Koirala D, et al. A single-molecule platform for investigation of interactions between G-quadruplexes and small-molecule ligands. Nat Chem. 2011;3(10):782-787. Published 2011 Aug 28.

[3]. Moruno-Manchon JF, Koellhoffer EC, Gopakumar J, et al. The G-quadruplex DNA stabilizing drug pyridostatin promotes DNA damage and downregulates transcription of Brca1 in neurons. Aging (Albany NY). 2017;9(9):1957-1970.

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