

RK33

## Chemical Properties

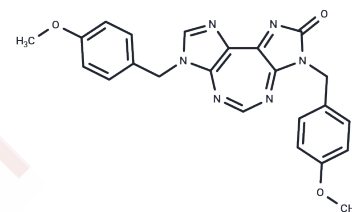
CAS No. : 1070773-09-9

Formula: C<sub>23</sub>H<sub>20</sub>N<sub>6</sub>O<sub>3</sub>

Molecular Weight: 428.44

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	RK33 (RK 33) is a first-in-class small molecule inhibitor of DDX3 (a RNA helicase) and causes G1 cell cycle arrest, induces apoptosis, and promotes radiation sensitization in DDX3-overexpressing cells.
Targets(IC50)	COX,DNA/RNA Synthesis,SARS-CoV
In vitro	RK-33 binds specifically to DDX3, but not to the closely related proteins DDX5 and DDX17. RK-33 inhibits cancer growth and radiosensitizes lung cancer cells in a DDX3-dependent manner. RK-33 has no effect on either mitochondrial respiration or ATP generation. RK-33 curbs proliferation and induces apoptosis in a DDX3-dependent fashion. Wnt signaling is mediated by DDX3 and inhibited by RK-33. RK-33 impairs radiation-induced DNA damage repair by inhibiting NHEJ activity[1].
In vivo	RK-33 in combination with radiation induces tumor regression in multiple mouse models of lung cancer. RK-33, at the dose used, is non-toxic in SCID mice. RK-33-treated mice do not exhibit any discernable morphological changes[1].
Cell Research	Healthy, 60-70% confluent MDA-MB-231 cells are transduced with shDDX3 lentivirus particles. Knockdown of DDX3 expression is confirmed both by qRT-PCR and immunoblotting. MDA-MB-231 cells are treated with RK-33 (7.5 μM) for 12 h and harvested for RNA. Microarray experiments are performed.(Only for Reference)

## Solubility Information

Solubility	H <sub>2</sub> O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 25 mg/mL (58.35 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	2.334 mL	11.6702 mL	23.3405 mL
5 mM	0.4668 mL	2.334 mL	4.6681 mL
10 mM	0.2334 mL	1.167 mL	2.334 mL
50 mM	0.0467 mL	0.2334 mL	0.4668 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

#### Reference

Bol GM, et al. EMBO Mol Med. 2015, 7(5):648-69.

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