

GDC-0425

## Chemical Properties

CAS No. : 1200129-48-1

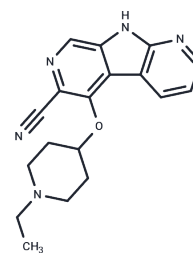
Formula: C<sub>18</sub>H<sub>19</sub>N<sub>5</sub>O

Molecular Weight: 321.38

Store at low temperature

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	GDC-0425 (RG-7602) is a potent and highly selective inhibitor of Checkpoint kinase 1 (Chk1). This product blocks DNA damage-induced cell cycle arrest by inhibiting Chk1 activity, forcing damaged cells into mitosis and ultimately leading to apoptosis. Research indicates that the activity of GDC-0425 is modulated by the Ras-MEK signaling pathway, and it significantly enhances tumor regression when combined with DNA-damaging agents like Gemcitabine.
Targets(IC50)	Others
In vitro	GDC-0425 dose-dependently inhibits proliferation (0.001-10 mM, 72 h) and induces Chk1 hyperphosphorylation (3 μM, 24 h) in Chk1-positive breast cancer cells. Mechanistic studies demonstrate that GDC-0425-mediated cell death is dependent on Ras-MEK signaling, as blocking this pathway via MEK inhibition or RNAi protects cells from viability loss [3].
In vivo	In NCr nude mice bearing osteosarcoma (143B) or TNBC (HCC1806, HCC70) xenografts, oral GDC-0425 (50-75 mg/kg) partially inhibits tumor growth. Combined treatment with GDC-0425 (administered at 24, 48, and 72 h post-chemo) and Gemcitabine (120 mg/kg, i.p.) leads to significant tumor regression across all models [3].

## Solubility Information

Solubility	H <sub>2</sub> O: 20 mg/mL (62.23 mM), when pH is adjusted to 3 with HCl. 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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	1mg	5mg	10mg
1 mM	3.1116 mL	15.5579 mL	31.1158 mL
5 mM	0.6223 mL	3.1116 mL	6.2232 mL
10 mM	0.3112 mL	1.5558 mL	3.1116 mL
50 mM	0.0622 mL	0.3112 mL	0.6223 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

Xiao Ding, et al. A supported liquid extraction LC-MS/MS method for determination of concentrations of GDC-0425, a small molecule Checkpoint kinase 1 inhibitor, in human plasma. *Biomed Chromatogr.* 2016 Dec;30(12):1984-1991.

Jeffrey R Infante, et al. Phase I Study of GDC-0425, a Checkpoint Kinase 1 Inhibitor, in Combination with Gemcitabine in Patients with Refractory Solid Tumors. *Clin Cancer Res.* 2017 May 15;23(10):2423-2432.

Ho-June Lee, et al. Ras-MEK Signaling Mediates a Critical Chk1-Dependent DNA Damage Response in Cancer Cells. *Mol Cancer Ther.* 2017 Apr;16(4):694-704.

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Tel:781-999-4286 E\_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481