

Palbociclib orotate

Chemical Properties

CAS No. :	2757498-64-7
Formula:	C ₂₉ H ₃₃ N ₉ O ₆
Molecular Weight:	603.63
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	Palbociclib (PD 0332991) orotate, an orally active selective inhibitor of CDK4 and CDK6, exhibits IC ₅₀ values of 11 and 16 nM, respectively. This compound demonstrates potent anti-proliferative effects and induces cell cycle arrest in cancer cells, applicable in research concerning HR-positive, HER2-negative breast cancer, and hepatocellular carcinoma [1] [3] [4].
Targets(IC ₅₀)	CDK
In vitro	Palbociclib orotate, at concentrations ranging from 0-1 μM over 24 hours, effectively inhibits Ser 795 phosphorylation in MDA-MB-435 cells, demonstrating an IC ₅₀ of 0.063 μM, and similarly impacts Ser 780 and Ser 795 phosphorylation in Colo-205 colon carcinoma cells [1]. At a wider concentration range of 0-10 μM for the same duration, it induces a G1 phase cell cycle arrest in MDA-MB-453 cells [1]. When administered at 500 nM for seven days, palbociclib orotate upregulates homologous gene expression (H2d1, H2k1, and B2m) in both MDA-MB-453 and MDA-MB-361 cells [2]. Additionally, with extended exposure of six days, palbociclib orotate suppresses the growth of various luminal ER-positive and HER2-amplified breast cancer cell lines, with IC ₅₀ values spanning from 4 nM to 1 μM [3]. Over a three-day period, it also limits the proliferation of human liver cancer cell lines with IC ₅₀ values between 0.01 μM and 3.49 μM and causes reversible cell cycle arrest [4].
In vivo	Palbociclib orotate, administered orally at doses of 75 or 150 mg/kg daily for 14 days, induces rapid tumor regression and impedes tumor growth [1]. At a dose of 90 mg/kg for 12 days, it also decreases Treg cell quantities and alters the Treg:CD8 ratio in the spleen and lymph nodes of tumor-free mice, highlighting its tumor-independent actions [2]. Furthermore, when given at 100 mg/kg for a week, palbociclib orotate exhibits potent anti-tumor effects in a genetically engineered mosaic mouse model of liver cancer [4].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.6566 mL	8.2832 mL	16.5664 mL
5 mM	0.3313 mL	1.6566 mL	3.3133 mL
10 mM	0.1657 mL	0.8283 mL	1.6566 mL
50 mM	0.0331 mL	0.1657 mL	0.3313 mL

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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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