Revision 1

#47284 Store at -20C

Palbociclib

1 mg

Cell Signaling TECHNOLOGY®

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Background

Palbociclib, also known as PD 0332991, is a potent and selective inhibitor of cyclin-dependent kinase 4 (Cdk4, IC_{50} = 11nM) and cyclin-dependent kinase 6 (Cdk6, IC_{50} = 16nM). Phosphorylation of retinoblastoma protein (Rb) by Cdk4 and Cdk6 leads to G_1-S phase advancement, which is an important checkpoint for cell division (1). This regulation of the cell cycle makes the activation and inhibition of Cdk4 and Cdk6 highly researched. Palbociclib has been shown to arrest the proliferation of 5T33MM tumor cells *in vivo* and *ex vivo*, and treatment with the compound has increased the survival rate of 5T33MM diseased mice (2).

Molecular Formula

$C_{24}H_{29}N_7O_2$

Molecular Weight

447.5 g/mol

Purity

>98%

CAS

571190-30-2

Solubility

Soluble in DMSO at 2 mg/ml.

Storage

Store lyophilized at -20ºC, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20ºC and use within 1 month to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

Directions for Use:

Palbociclib is supplied as a lyophilized powder. For a 2 mM stock, reconstitute 1 mg of powder in 1.1 ml of DMSO. Heating to 37ºC and/or additional vortexing may be required. Working concentrations and length of treatment can vary depending on the desired effect.

Background References

1. Fry, D.W. et al. (2004) *Mol Cancer Ther* 3, 1427-38.
2. Menu, E. et al. (2008) *Cancer Res* 68, 5519-23.

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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