

Product Data Sheet

Product Name: Purvalanol A

Cat. No.: GC14707

Chemical Properties

Cas. No. 212844-53-6

Chemical Name (R)-2-(((6-((3-chlorophenyl)amino)-9-isopropyl-9H-purin-2-yl)amino)-3-methylbutan-1-ol

SMILES C1C=CC(NC2=C3C(N(C(C)C)C=N3)=NC(N[C@@H](CO)C(C)C)=N2)=CC=C1

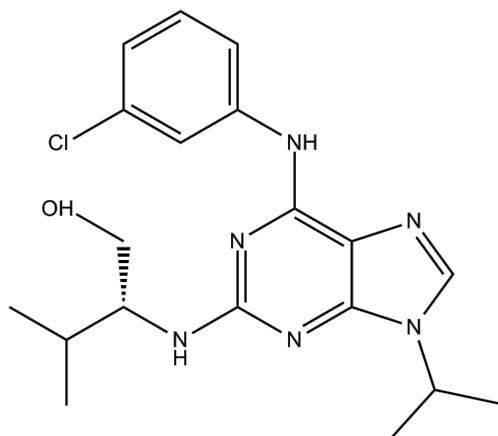
Formula $C_{19}H_{25}ClN_6O$ M.Wt 388.89

Solubility $\geq 19.45\text{mg/mL}$ in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Purvalanol A is a potent and selective inhibitor of CDK with IC_{50} values of 4, 35, 70, 75 and 850 nM for cdc2-cyclin B, cdk2-cyclin E, cdk2-cyclin A, cdk5-p35 and cdk4-cyclin D1, respectively [1].

Cyclin-dependent kinases (CDKs) are a family of protein kinases and play an important role in regulating the cell cycle. They are also involved in regulating transcription, mRNA processing, and the differentiation of nerve cells.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

In MKN45 cells, purvalanol A (30 μ M) reduced the expression of antiapoptotic proteins Bcl-2, Bcl-XL and survivin and induced apoptosis. Also, purvalanol A inhibited the phosphorylation of STAT3 by Janus kinase 2 (JAK2) and the expression and phosphorylation of RNA polymerase II, which was involved in transcriptional regulation [2]. In MCF-7 ER(+) cells, purvalanol A induced apoptosis in a caspase-dependent way and increased the levels of spermidine/spermine N1-acetyltransferase (SSAT) and polyamine oxidase (PAO) [3].

In the dentate gyrus (DG) of the rat hippocampus, purvalanol A (40 nmol/3 μ l) significantly induced the number of BrdU-positive cells in a time- and concentration-dependent way [4].

References:

- [1]. Gray NS, Wodicka L, Thunnissen AM, et al. Exploiting chemical libraries, structure, and genomics in the search for kinase inhibitors. *Science*, 1998, 281(5376): 533-538.
- [2]. Iizuka D, Ogura A, Kuwabara M, et al. Purvalanol A induces apoptosis and downregulation of antiapoptotic proteins through abrogation of phosphorylation of JAK2/STAT3 and RNA polymerase II. *Anticancer Drugs*, 2008, 19(6): 565-572.
- [3]. Obakan P, Arsan ED, Zfiliz P, et al. Purvalanol A is a strong apoptotic inducer via activating polyamine catabolic pathway in MCF-7 estrogen receptor positive breast cancer cells. *Mol Biol Rep*, 2014, 41(1): 145-154.
- [4]. Małkowiak M, Kolasiewicz W, Markowicz-Kula K, et al. Purvalanol A, inhibitor of cyclin-dependent kinases attenuates proliferation of cells in the dentate gyrus of the adult rat hippocampus. *Pharmacol Rep*, 2005, 57(6): 845-849.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA