Product Data Sheet

Product Name: 7BIO
Cat. No.: GC16037

Chemical Properties

Cas. No.	916440-85-2		
Chemical Name	7-bromo-3-[1,3-dihydro-3-(hydroxyimino)-2H-indol-2-ylidene]-1,3-dihydro-2H-indol-2-one		
SMILES	O/N=C(C1=CC=CC=C1N2)/C2=C3C(NC4=C(Br)C=CC=C4/3)=O		
Formula	$C_{16}H_{10}BrN_3O_2$	M.Wt	356.2
Solubility	DMSO : 250 mg/mL (701.91 mM; Need ultrasonic); Ethanol : 50 mg/mL (140.38 mM; Need ultrasonic)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	7BIO		

Background

7-bromoindirubin-3'-oxime (7BIO), a derivative of indirubin, is a caspase independent nonapoptotic cell death inducer [1]. 7-bromoindirubin-3'-oxime is an inhibitor of FLT3, DYRK1A, DYRK2, Aurora B and Aurora C kinases.

FLT3 is a cytokine receptor expressed on the surface of many hematopoietic progenitor cells. Signalling of FLT3 is important for the normal development of haematopoietic stem cells and progenitor cells. DYRK1A and DYRK2 have been involved in catalyzing its autophosphorylation on serine/threonine and tyrosine residues and play a significant role in a signaling pathway regulating cell proliferation. Aurora kinases are serine/threonine kinases which are essential for cell proliferation and cellular division by controlling chromatid segregation.

7-bromoindirubin-3'-oxime (7BIO) showed a marginal inhibitory activity towards CDKs

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

and GSK-3. 7BIO triggered a rapid cell death process distinct from apoptosis. 7BIO induced the appearance of large pycnotic nuclei, without classical features of apoptosis such as chromatin condensation and nuclear fragmentation. 7BIO-induced cell death was not accompanied by cytochrome c release neither by any measurable effector caspase activation. 7BIO triggered the activation of non-apoptotic cell death, possibly through necroptosis or autophagy. 7BIO inhibited FLT3, the dual-specificity tyrosine phosphorylation-regulated kinases, DYRK1A and DYRK2 with the IC50 values of 0.34 μM, 1.9 and 1.3 μM, respectively [2]. 7BIO also inhibited the activity of Aurora B and C kinases with IC50 values of 4.6 and 0.7 μM, respectively [3].

References:
[1] Ribas J, Bettayeb K, Ferandin Y, et al. 7-Bromoindirubin-3′-oxime induces caspase-independent cell death[J]. Oncogene, 2006, 25(47): 6304-6318.
[2] Myrianthopoulos V, Kritsanida M, Gaboriaud-Kolar N, et al. Novel inverse binding mode of indirubin derivatives yields improved selectivity for DYRK kinases[J]. ACS medicinal chemistry letters, 2012, 4(1): 22-26.
[3] Myrianthopoulos V, Magiatis P, Ferandin Y, et al. An integrated computational approach to the phenomenon of potent and selective inhibition of aurora kinases B and C by a series of 7-substituted indirubins[J]. Journal of medicinal chemistry, 2007, 50(17): 4027-4037.