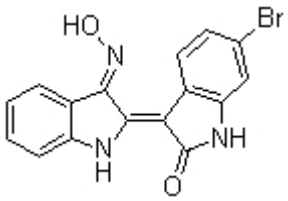
Product Introduction

BIO

BIO (6-bromoindirubin-3'-oxime) is a specific inhibitor of **GSK-3** with **IC50** of 5 nM for GSK-3α/β, shows >16-fold selectivity over CDK5, also a pan-**JAK** inhibitor.

Technical Data:

Molecular Weight (MW):	356.17	
Formula:	$C_{16}H_{10}BrN_3O_2$	
Solubility (25°C) * <1 mg/ml means slightly soluble or insoluble:	DMSO 71 mg/mL	
	Water <1 mg/mL	
	Ethanol 21 mg/mL	
Purity:	>98%	
Storage:	3 years -20℃Powder	
	6 months-80℃in DMSO	
CAS No.:	667463-62-9	

Biological Activity

BIO (6-bromoindirubin-3'-oxime) is a specific inhibitor of glycogen synthase kinase-3 (GSK-3), with IC50 of 5 nM for GSK-3α/β, shows >16-fold selectivity over CDK5. BIO interacts within the ATP binding pocket of these kinases, reduces β-catenin phosphorylation on a GSK-3-specific site in cellular models, closely mimicks Wnt signaling in Xenopus embryos. [1] In human and mouse embryonic stem cells, BIO maintains the undifferentiated phenotype and sustains expression of the pluripotent state-specific transcription factors Oct-3/4, Rex-1 and Nanog. BIO-mediated Wnt activation is functionally reversible, as withdrawal of

the compound leads to normal multidifferentiation programs in both human and mouse embryonic stem cells. [2] BIO promotes proliferation in mammalian cardiomyocytes. [3]6BIO is also a pan-JAK inhibitor, with IC50 values of 0.03, 1.5, 8.0, 0.5 μM for TYK2, JAK1, JAK2 and JAK3. BIO selectively inhibits phosphorylation of STAT3 and induces apoptosis of human melanoma cells. [4]

BIO suppresses melanoma tumor growth in a mouse xenograft model. [4]

The first pharmacological agent shown to maintain self-renewal in human and mouse embryonic stem cells.

References

[1] Meijer L, et al. Chem Biol, 2003, 10(12), 1255-1266.

[2] Sato N, et al. Nat Med, 2004, 10(1), 55-63.

[3] Tseng AS, et al. Chem Biol, 2006, 13(9), 957-963.

[4] Liu L, et al. Cancer Res. 2011 Jun 1;71(11):3972-3279.

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