



DRB

Data Sheet

Catalog Number:	MC11099	Product Type:	Small Molecule
Bio-Activity:	Transcription inhibitor; CK2 inhibitor	CAS #:	53-85-0
Research Categories:	Cancer	Chemical Name:	5,6-Dichloro-1-β-D-ribofuranosylbenzimidazole
Solubility:	Soluble in DMSO (up to 20 mg/ml)	Molecular Formula:	C12H12Cl2N2O4
Purity:	> 98%	Molecular Weight:	319.14
Format:	Powder	Ship Temp:	Ambient
Storage:	Room Temperature		

Application Notes

Description/Data:

A classic inhibitor of transcription by RNA polymerase II. A relatively selective inhibitor of Cdk9 (IC50=3 μ M), the kinase of the positive transcription elongation factor b (P-TEF-b) required for processive transcription elongation by RNA polymerase II [1,2]. Also inhibits casein kinase II, IC50=4-10 μ M [3]. Suppresses the SIRT1/CK2 α pathway and enhances the radiosensitivity of human cancer cells [4]. Kinase-independent activities of Cdk9 such as glucocorticoid receptor modulation are not inhibited by DRB [5].

References:

- 1) Baumli et al. (2010), Halogen bonds form the basis for selective P-TEFb inhibition by DRB; *Chem.Biol.*, 17 931
- 2) Yamaguchi et al. (1998), Interplay between positive and negative elongation factors: drawing a new view of DRB; *Genes Cells*, 3 9
- 3) Zandomeni (1989), Kinetics of inhibition by 5,6-dichloro-1-beta-D-ribofuranosylbenzimidazole; *Biochem.J.*, 262 469
- 4) Wang et al. (2014), Inhibition of P-TEFb by DRB suppresses SIRT1/CK2 α pathway and enhances radiosensitivity of human cancer cells; *Anticancer Res.*, 34 6981
- 5) Zhu et al. (2014), A kinase-independent activity of Cdk9 modulates glucocorticoid receptor-mediated gene induction; *Biochemistry*, 53 1753

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