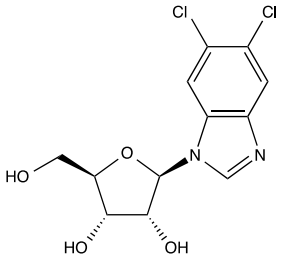
**Catalog # 10-2047**

# DRB

CAS# 53-85-0

5,6-Dichlorobenzimidazole riboside; 5,6-Dichloro-1-β-D-ribofuranosylbenzimidazole; NSC 401575

Lot # X101224




A classic inhibitor of transcription by RNA polymerase II. A relatively selective inhibitor of Cdk9 ($IC_{50}$=3 μM), 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, $IC_{50}$=4-10 μM.[3] Suppresses the SIRT1/CK2α 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]


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/CK2α 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


## PHYSICAL DATA

| | |
|---|---|
| Molecular Weight: | 319.14 |
| Molecular Formula: | $C_{12}H_{12}Cl_2N_2O_4$ |
| Purity: | >98% by HPLC<br>NMR: (Conforms) |
| Solubility: | DMSO (20 mg/ml) |
| Physical Description: | White solid |
| Storage and Stability: | Store as supplied at -20°C for up to 1 year from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 3 months. |




Focus Biomolecules LLC 400 Davis Drive, Suite 600 Plymouth Meeting PA 19462

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