A classic inhibitor of transcription by RNA polymerase II. A relatively selective inhibitor of Cdk9 ($IC_{50}=3 \mu M$), 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, $IC_{50}=4-10 \mu M$.\(^3\) Suppresses the SIRT1/CK2\(\alpha\) 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  
4) Wang et al. (2014), *Inhibition of P-TEFb by DRB suppresses SIRT1/CK2\(\alpha\) 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: $C_{12}H_{12}Cl_{2}N_{2}O_{4}$  
- Purity: >98% by HPLC  
- 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.

Materials provided by Focus Biomolecules are for laboratory research use only and are not intended for human or veterinary applications.