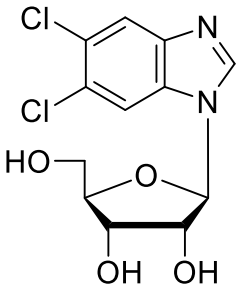
Technical Information about DRB

Update: September 21, 2018 HJ



Abbreviation: **DRB**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{12}H_{12}Cl_2N_2O_4$	[53-85-0]	319.1	λ_{max} 254 nm / ε 6400 / pH 7	D 012

Name: 5, 6- Dichloro- 1- β- D- ribofuranosyl benzimidazole

Description: DRB is an analogue of adenosine in which the adenine moiety is replaced by a highly lipophilic 5, 6- modified benzimidazole ring system.

Properties:

- **Inhibitor of casein kinase II**
- **Inhibitor of RNA synthesis in eukaryotic cells**

Specification: Crystallized or lyophilized solid. Please keep in mind that equal amounts of the compound may look different in volume due to sensitivity of the lyophilized form to humidity. The compound can even contract to small volume droplets. Normally the product is located in the conical bottom of the tube.. Micro molar quantities are determined by UV at λ_{max}.

Purity: Typical analysis is better than 98% (HPLC / UV / 254 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: Due to its high lipophilicity the solubility of DRB in water is limited. However, the compound has good solubility in organic solvents such as DMF or DMSO (> 100 mM). Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing. When opening the tube please make sure that no substance is lost within the cap.

Stability and Storage: DRB has sufficient stability at room temperature and does not need special care during handling or shipment. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form.

Toxicity and Safety: Since nucleoside analogues have multiple tasks in every organism, it is not unlikely that DRB will interfere with many cell regulation processes *in vivo*. However, due to the rather small quantities to work with, no health hazards have been reported. Nevertheless, please keep in mind, that the *in vivo* properties of this compound are not sufficiently characterized up to now. Avoid skin contact or ingestion and allow only trained personnel to handle the product.
Our products are designed, developed and sold for research purposes only! They are intended for *in vitro* and nonhuman *in vivo* laboratory applications. Any other use requires approval of health authorities.
Not for drug, household or related uses!

Selected References for DRB:

Shin, H.C.; Landowski, C.P.; Sun, D.X.; Vig, B.S.; Kim, I.; Mittal, S.; Lane, M.; Rosania, G.; Drach, J.C.; Amidon, G.L., *Biochem. Biophys. Res. Commun*., **307**, 696 - 703 (2004): "Functional Expression and Characterization of a Sodium-dependent Nucleoside Transporter hCNT2 Cloned from Human Duodenum"

BIOLOG Life Science Institute, Bremen, Germany Phone: 49 (0) 421 591355 Fax: 49 (0) 421 5979713 e-mail: service@biolog.de

Zandomeni, R.; Carrera Zandomeni, M.; Shugar, D.; Weinmann, R., *J. Biol. Chem.*, **261**, 3414 - 3419 (1986): “Casein Kinase Type II is Involved in the Inhibition by 5,6-Dichloro-1-beta-D-ribofuranosylbenzimidazole of Specific RNA Polymerase II Transcription”

Tamm, I.; Sehgal, P.B., *Adv. Virus Res.*, **22**, 187 (1978): ”Halobenzimidazole Ribosides and RNA Synthesis of Cells and Viruses”

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