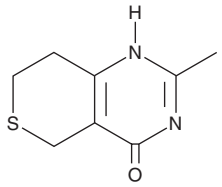
PRODUCT INFORMATION

DR2313

Item No. 21181

CAS Registry No.:	284028-90-6
Formal Name:	3,5,7,8-tetrahydro-2-methyl-4H-thiopyrano[4,3-d]pyrimidin-4-one
Synonym:	PARP Inhibitor XI
MF:	$C_8H_{10}N_2OS$
FW:	182.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 229, 273 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

DR2313 is supplied as a crystalline solid. A stock solution may be made by dissolving the DR2313 in the solvent of choice, which should be purged with an inert gas. DR2313 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of DR2313 in these solvents is approximately 2, 20, and 10 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of DR2313 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DR2313 in PBS, pH 7.2, is approximately 0.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

DR2313 is an inhibitor of poly(ADP-ribose) polymerase (PARP; IC_{50} = 0.2 and 0.24 µM for PARP1 and PARP2, respectively, in nuclear rat brain extracts).[1] It is selective for PARP, with no effect on GAPDH, ADH, LDH, or on lipid peroxidation. DR2313 is competitive with NAD^+ at the catalytic site of PARP with a K_i value of 0.23 µM. Pretreatment of primary rat cortical cultures prevents cell death (EC_{50} = 0.27 µM), and, *in vivo*, it reduces infarct volume in a rat model of cerebral ischemia. DR2313 has been used to investigate cell death after middle cerebral artery occlusion.[2]

References

1. Nakajima, H., Kakuki, N., Ohkuma, K., *et al.* A newly synthesized poly(ADP-ribose) polymerase inhibitor, DR2313 [2-methyl-3,5,7,8-tetrahydrothiopyrano[4,3-d]-pyrimidine-4-one]: Pharmacological profiles, neuroprotective effects, and therapeutic time window in cerebral ischemia in rats. *J. Pharmacol. Exp. Ther.* **312(2)**, 472-481 (2005).
2. Xu, Z., Zhang, J., David, K.K., *et al.* Endonuclease G does not play an obligatory role in poly(ADP-ribose) polymerase-dependent cell death after transient focal cerebral ischemia. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* **299(1)**, R215-R221 (2010).

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