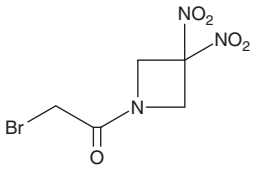
PRODUCT INFORMATION

RRx-001

Item No. 28846

CAS Registry No.: 925206-65-1
Formal Name: 2-bromo-1-(3,3-dinitro-1-azetidinyl)-ethanone
Synonym: ABDNAZ
MF: $C_5H_6BrN_3O_5$
FW: 268.0
Purity: ≥95%
Supplied as: A 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

RRx-001 is supplied as a solid. A stock solution may be made by dissolving the RRx-001 in the solvent of choice, which should be purged with an inert gas. RRx-001 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of RRx-001 in ethanol is approximately 2 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Description

RRx-001 is an anticancer agent.[1] It inhibits growth in a panel of 12 cancer cell lines (IC_{50}s =1.8-6 µM), an effect that is enhanced in SCC VII cells under hypoxic conditions. RRx-001 increases intracellular levels of reactive oxygen species (ROS) in HT-29 and SCC VII cells in a concentration- and time-dependent manner and induces apoptosis in SCC VII, HL-60, and Daudi cells when used at concentrations of 5, 5, and 4 µM, respectively. RRx-001 (5 mg/kg per day for five days) reduces tumor growth and enhances radiation-induced tumor growth reduction in an SCC VII murine squamous cell carcinoma model. Pre-incubation of red blood cells and hemolysate with RRx-001 (3 mM) increases nitrite-induced nitric oxide (NO) release under hypoxic conditions.[2] RRx-001 (10 mg/kg) also decreases parasitemia and increases survival in a mouse model of *P. berghei* ANKA infection.[3]

References

1. Ning, S., Bednarski, M., Oronsky, B., *et al*. Dinitroazetidines are a novel class of anticancer agents and hypoxia-activated radiation sensitizers developed from highly energetic materials. *Cancer Res*. **72(10)**, 2600-2608 (2012).
2. Fens, M.H., Cabrales, P., Scicinski, J., *et al*. Targeting tumor hypoxia with the epigenetic anticancer agent, RRx-001: A superagonist of nitric oxide generation. *Med. Oncol*. **33(8)**, 85 (2016).
3 Yalcin, O., Oronsky, B., Carvalho, L.J.M., *et al*. From METS to malaria: RRx-001, a multi-faceted anticancer agent with activity in cerebral malaria. *Malar. J*. **14**, 218 (2015).

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