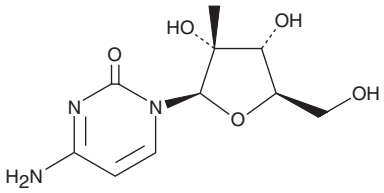
PRODUCT INFORMATION

2'-C-Methylcytidine

Item No. 22887

CAS Registry No.:	20724-73-6
Formal Name:	2'-C-methyl-cytidine
Synonym:	2CMC
MF:	$C_{10}H_{15}N_3O_5$
FW:	257.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 275 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

2'-C-Methylcytidine (2CMC) is supplied as a crystalline solid. A stock solution may be made by dissolving the 2CMC in the solvent of choice, which should be purged with an inert gas. 2CMC is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 2CMC in these solvents is approximately 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 2CMC can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 2CMC in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

2CMC is a ribonucleoside with broad-spectrum antiviral activity.[1] It reduces the number of viral plaques in BHK-21 cells infected with dengue type 2, reovirus type 1, West Nile, and yellow fever RNA viruses with EC_{50} values of 95, 26, 80, and 75 µM, respectively. 2CMC inhibits hepatitis C virus (HCV) replication (EC_{50} = 2.2 µM in a replicon assay) and protects MDBK cells from infection with bovine virus diarrhea virus (BVDV; EC_{50} = 2.2 µM) and human coronavirus (HCoV; EC_{50} = 90 µM). It also reduces infectious virus yield in BHK-21 cells infected with foot-and-mouth disease virus (FMDV; EC_{50} = 6.4 µM) and swine vesicular disease virus (SVDV; EC_{50} = 45.2 µM).[2] *In vivo*, 2CMC reduces viral shedding to undetectable levels in a mouse model of persistent norovirus infection.[3]

References

1. Benzaria, S., Bardiot, D., Bouisset, T., *et al.* 2′-C-Methyl branched pyrimidine ribonucleoside analogues: Potent inhibitors of RNA virus replication. *Antivir. Chem. Chemother.* **18(4)**, 225-242 (2007).
2. Goris, N., De Palma, A., Toussaint, J.F., *et al.* 2'-C-methylcytidine as a potent and selective inhibitor of the replication of foot-and-mouth disease virus. *Antiviral Res.* **73(3)**, 161-168 (2007).
3. Rocha-Pereira, J., Van Dycke, J., and Neyts, J. Treatment with a nucleoside polymerase inhibitor reduces shedding of murine norovirus in stool to undetectable levels without emergence of drug-resistant variants. *Antimicrob. Agents Chemother.* **60(3)**, 1907-1911 (2015).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM