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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

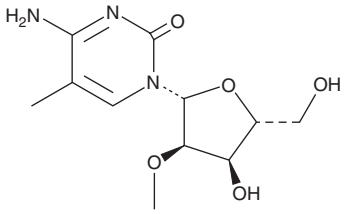
linkedin.com/company/szaboscandic

PRODUCT INFORMATION

5-methyl-2'-O-Methylcytidine

Item No. 37908

CAS Registry No.: 113886-70-7
Formal Name: 5-methyl-2′-O-methyl-cytidine
Synonyms: m^5Cm, 2'-O-Methyl-5-methyl-cytosine
MF: $C_{11}H_{17}N_3O_5$
FW: 271.3
Purity: ≥98%
UV/Vis.: λ_{max}: 282 nm
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

5-methyl-2'-O-Methylcytidine is supplied as a solid. A stock solution may be made by dissolving the 5-methyl-2'-O-methylcytidine in the solvent of choice, which should be purged with an inert gas. 5-methyl-2'-O-Methylcytidine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 5-methyl-2'-O-methylcytidine in these solvents is approximately 30 mg/ml.

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 5-methyl-2'-O-methylcytidine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 5-methyl-2'-O-methylcytidine in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

5-methyl-2'-O-Methylcytidine is a modified nucleoside that has been found in *S. solfataricus*, *T. neutrophilus*, and *P. occultum* tRNA. [1] It is found in Huh7 cells infected with Zika virus, hepatitis C virus (HCV), poliovirus, or HIV-1 provirus but not uninfected Huh7 cells.[2] 5-methyl-2'-O-Methylcytidine (4 µg/ml) inhibits IL-12 and IL-6 release induced by a toll-like receptor 9 (TLR9) agonist, an unmethylated CpG oligodeoxynucleotide, in mouse spleen cell cultures.[3]

References

1. Edmonds, C.G., Crain, P.F., Hashizume, T., *et al.* Structural characterization of four ribose-methylated nucleosides from the transfer RNA of extremely thermophilic archaebacteria. *J. Chem. Soc. Chem. Commun.* **12**, 909-910 (1987).
2. McIntyre, W., Netzband, R., Bonenfant, G., *et al.* Positive-sense RNA viruses reveal the complexity and dynamics of the cellular and viral epitranscriptomes during infection. *Nucleic Acids Res.* **46(11)**, 5776-5791 (2018).
3. Yu, D., Wang, D., Zhu, F.-G., *et al.* Modifications incorporated in CpG motifs of oligodeoxynucleotides lead to antagonist activity of toll-like receptors 7 and 9. *J. Med. Chem.* **52(16)**, 5108-5114 (2009).

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