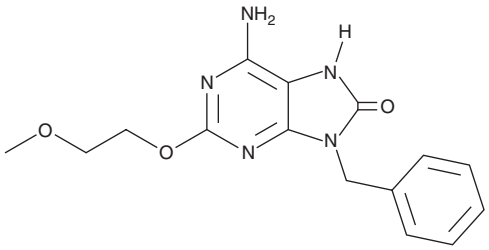
PRODUCT INFORMATION

Toll-Like Receptor 7 Ligand II

Item No. 17228

CAS Registry No.: 226907-52-4
Formal Name: 6-amino-7,9-dihydro-2-(2-methoxyethoxy)-9-(phenylmethyl)-8H-purin-8-one
Synonyms: CL 087, SM-360320, TLR7 Ligand II, 1V136
MF: $C_{15}H_{17}N_5O_3$
FW: 315.3
Purity: ≥98%
UV/Vis.: λ_{max}: 237, 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

TLR7 ligand II is supplied as a crystalline solid. A stock solution may be made by dissolving the TLR7 ligand II in the solvent of choice, which should be purged with an inert gas. TLR7 ligand II is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of TLR7 ligand II in these solvents is approximately 30 mg/ml.

TLR7 ligand II is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, TLR7 ligand II should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. TLR7 ligand II has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

A potential treatment for hepatitis C virus (HCV) is to induce immune cell-derived interferon (IFN) production using synthetic agonists of TLR7. TLR7 ligand II is an orally bioavailable 8-hydroxyadenine analog that induces IFN production by binding to TLR7 on immune cells.[1,2] It induces IFNα in human peripheral blood mononuclear cells with an EC_{50} value of 0.14 µM.[2] At 10 µM, TLR7 ligand II was shown to reduce HCV levels by 60% in 24 hours in the human hepatocyte cell line Huh7, which carries a HCV replicon.[3] It induces IFN in mice with a minimal effective dose of approximately 0.03 mg/kg, making it approximately 100-fold more potent than imiquimod (Item No. 14956).[1]

References

1. Kurimoto, A., Ogino, T., Ichii, S., *et al.* Synthesis and evaluation of 2-substituted 8-hydroxyadenines as potent interferon inducers with improved oral bioavailabilities. *Bioor. Med. Chem.* **12(5)**, 1091-1099 (2004).
2. Jin, G., Wu, C.C.N., Tawatao, R.I., *et al.* Synthesis and immunostimulatory activity of 8-substituted amino 9-benzyladenines as potent toll-like receptor 7 agonists. *Bioor. Med. Chem.* **16(17)**, 4559-4563 (2006).
3. Lee, J., Wu, C.C.N., Lee, K.J., *et al.* Activation of anti-hepatitis C virus responses *via* toll-like receptor 7. *Proc. Natl. Acad. Sci. USA* **103(6)**, 1828-1833 (2006).

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