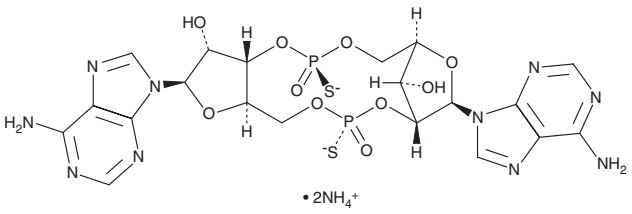
PRODUCT INFORMATION

ML RR-S2 CDA (ammonium salt)

Item No. 24106

CAS Registry No.: 1638750-96-5
Formal Name: [P(R)]-5'-O-[(R)-hydroxymercaptophosphinyl]-P-thioadenylyl-(2'→5')-adenosine, cyclic nucleotide, diammonium salt
Synonym: STING Inducer-1
MF: $C_{20}H_{22}N_{10}O_{10}P_2S_2 \bullet 2NH_4$
FW: 724.6
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥3 years



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

Laboratory Procedures

ML RR-S2 CDA (ammonium salt) is supplied as a solid. A stock solution may be made by dissolving the ML RR-S2 CDA (ammonium salt) in the solvent of choice. ML RR-S2 CDA (ammonium salt) is soluble in the organic solvent DMSO, which should be purged with an inert gas. It is also soluble in water. The solubility of ML RR-S2 CDA (ammonium salt) in DMSO and water is approximately 15 and 12.5 mg/ml, respectively. We do not recommend storing the aqueous solution for more than one day.

Description

ML RR-S2 CDA is a synthetic cyclic dinucleotide (CDN) that contains non-canonical 2'5'-phosphodiester bonds and is an activator of stimulator of interferon genes (STING).[1] It contains mixed linkages (ML) with both 2'5' and 3'5' linkages, which leads to increased thermal stability of human STING in a differential scanning fluorimetry (DSF) assay. ML RR-S2 CDA increases type I interferon production by THP-1 human monocytes relative to unmodified cyclic di-AMP (CDA; Item No. 17753), indicating the ML enhances its action at human STING. It induces expression of IFN-β and the pro-inflammatory cytokines TNF-α, IL-6, and Mcp-1 in murine bone marrow macrophages (BMM) isolated from wild-type, but not $STING^{-/-}$, mice. ML RR-S2 CDA also induces IFN-β expression in peripheral blood mononuclear cells (PBMCs) isolated from donors carrying $STING^{WT/WT}$, $STING^{WT/REF}$, and $STING^{WT/HAQ}$ alleles. *In vivo*, ML RR-S2 CDA initiates tumor regression and prevents tumor growth upon tumor cell reimplantation in 4T1 breast and CT26 colon cancer mouse xenograft models.

Reference

1. Corrales, L., Glickman, L.H., McWhirter, S.M., *et al.* Direct activation of STING in the tumor microenvironment leads to potent and systemic tumor regression and immunity. *Cell Rep.* **11(7)**, 1018-1030 (2015).

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