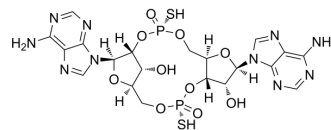


ADU-S100

Cat. No.:	HY-12885
CAS No.:	1638241-89-0
Molecular Formula:	C ₂₀ H ₂₄ N ₁₀ O ₁₀ P ₂ S ₂
Molecular Weight:	690.54
Target:	STING
Pathway:	Immunology/Inflammation
Storage:	-20°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

H₂O : 20 mg/mL (28.96 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.4481 mL	7.2407 mL	14.4814 mL
	5 mM	0.2896 mL	1.4481 mL	2.8963 mL
	10 mM	0.1448 mL	0.7241 mL	1.4481 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

ADU-S100 (MIW815), an activator of stimulator of interferon genes (STING), leads to potent and systemic tumor regression and immunity^[1].

IC₅₀ & Target

STING^[1]

In Vitro

ADU-S100 is unstable in its free base form. ADU-S100 ammonium salt (HY-12885B) improves both stability and lipophilicity, promoting significantly increased STING signaling as compared to endogenous and pathogen-derived cyclic dinucleotides (CDNs)^[1].

ADU-S100 shows enhanced type I IFN production over CDA in THP-1 human monocytes. In contrast, the dithio, mixed-linkage CDN derivatives (ML RR-CDA, ML RR-S2 CDG, and ML RR-S2 cGAMP) potently activate all five hSTING alleles, including the refractory hSTING^{REF} and hSTING^Q alleles. ADU-S100 induces the highest expression of IFN-β and the pro-inflammatory cytokines TNF-α, IL-6, and MCP-1 on a molar equivalent basis, as compared to endogenous ML cGAMP and the TLR3 agonist poly I:C. ADU-S100 is also found to induce aggregation of STING and induce phosphorylation of TBK1 and IRF3 in mouse bone marrow macrophage (BMM). ADU-S100 induces significantly higher levels of IFN-α when compared to ML cGAMP^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

ADU-S100 shows higher anti-tumor control than the endogenous ML cGAMP. A dose response of the ADU-S100 compound is

performed in B16 tumor-bearing mice, which identifies an optimal antitumor dose level that also elicits maximum tumor antigen-specific CD8⁺ T cell responses, and improves long-term survival to 50%^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay ^[1]

Cryopreserved hPBMCs are thawed and 1×10^6 cells per well are plated in a 96 well plate in RPMI media. Cells are stimulated with 10 μ M ADU-S100 or ML cGAMP for 6 hours and supernatants are harvested. Supernatants are diluted 1:2 and assayed for IFN- α protein using Cytometric Bead Array (CBA) Human Flex Set. Data is collected using a FACSVerse cytometer and analyzed by FCAP Array Software^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Administration ^[1]

Mice^[1]

WT C57BL/6 mice are inoculated with 5×10^4 B16.F10 cells in the left flank (n=8). When tumor volumes are 100 mm³ mice receive three IT doses of either ML RR-S2 CDG (25 μ g), ADU-S100 (50 μ g), or HBSS as control. WT C57BL/6 mice are inoculated with 5×10^4 B16.F10 cells in the left flank (n=5). When tumor volumes are 100 mm³ they received three IT doses of ADU-S100 at 5, 25, 50 or 100 μ g or HBSS as control. WT C57BL/6 mice are inoculated with 5×10^4 B16.F10 cells in the left flank (n=8). When tumor volumes are 100 mm³ they receive three IT doses of 100 μ g ADU-S100 or HBSS as control. Treatments are administered on days 13, 17 and 20 and tumor measurements are taken twice weekly. Results are shown as percent survival by Log-rank (Mantel-Cox) test (A and C)^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nature. 2023 Apr;616(7958):806-813.
- Cancer Cell. 2023 Jun 12;41(6):1073-1090.e12.
- Cancer Cell. 2020 Mar 16;37(3):289-307.e9.
- Nat Nanotechnol. 2021 Sep 30.
- Nat Commun. 2023 Oct 2;14(1):6132.

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REFERENCES

[1]. Corrales L, et al. Direct Activation of STING in the Tumor Microenvironment Leads to Potent and Systemic Tumor Regression and Immunity. Cell Rep. 2015 May 19;11(7):1018-30.

Caution: Product has not been fully validated for medical applications. For research use only.

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