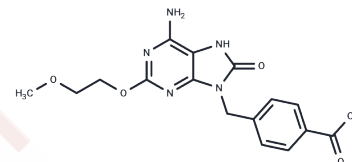


1V209

## Chemical Properties

CAS No. : 1062444-54-5  
 Formula: C<sub>16</sub>H<sub>17</sub>N<sub>5</sub>O<sub>5</sub>  
 Molecular Weight: 359.34  
 Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year  
*Actual storage temperature shall be subject to the COA.*



## Biological Description

Description	1V209 (TLR7 agonist T7) is a Toll-like receptor 7 (TLR7) agonist known for its anti-tumor properties.
Targets(IC50)	TLR
In vitro	The small molecule synthetic TLR7 ligand, 2-methoxyethoxy-8-oxo-9-(4-carboxy benzyl) adenine (1V209), and $\alpha$ -mannose were coimmobilized via linker molecules consisting of thioctic acid on the GNP surface (1V209- $\alpha$ Man-GNPs). The in vitro cytokine production activity of 1V209- $\alpha$ Man-GNPs was higher than that of the unconjugated 1V209 derivative in mouse bone marrow-derived dendritic cells and in human peripheral blood mononuclear cells[1].
In vivo	In the in vivo immunization study, 1V209- $\alpha$ Man-GNPs induced significantly higher titers of IgG2c antibody specific to ovalbumin as an antigen than did unconjugated 1V209, and splenomegaly and weight loss were not observed[1].

## Solubility Information

Solubility	DMSO: 83.33 mg/mL (231.9 mM), Sonication is recommended. ( $< 1$ mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (9.18 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	2.7829 mL	13.9144 mL	27.8288 mL
5 mM	0.5566 mL	2.7829 mL	5.5658 mL
10 mM	0.2783 mL	1.3914 mL	2.7829 mL
50 mM	0.0557 mL	0.2783 mL	0.5566 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Gold Nanoparticles Coimmobilized with Small Molecule Toll-Like Receptor 7 Ligand and  $\alpha$ -Mannose as Adjuvants [J]. *Bioconjugate Chemistry*, 2019, 30(11):2811-2821.

Liang C, Xiong N, Liu M, et al. Manganese immunotherapy for treating osteosarcoma: Glycosylating 1V209 anchored MnO<sub>2</sub> nanosheets prompt pro-inflammatory macrophage polarization. *Nano Today*. 2023, 48: 101670.

Shinchi H, et al. Enhancement of the Immunostimulatory Activity of a TLR7 Ligand by Conjugation to Polysaccharides. *Bioconjug Chem*. 2015 Aug 19;26(8):1713-23.

Battistella C, et al. Delivery of Immunotherapeutic Nanoparticles to Tumors via Enzyme-Directed Assembly. *Adv Healthc Mater*. 2019 Dec;8(23):e1901105.

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