

## 5-OP-RU

## Chemical Properties

CAS No. : 2408493-91-2

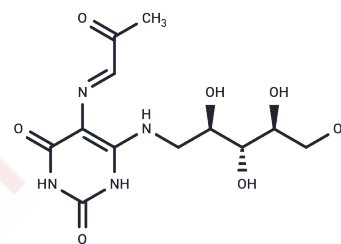
Formula: C<sub>12</sub>H<sub>18</sub>N<sub>4</sub>O<sub>7</sub>

Molecular Weight: 330.3

Storage: Keep away from direct sunlight, Keep away from moisture, Store at low temperature

Powder: -20°C for 3 years

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	5-OP-RU belongs to immunomodulators and is an MR1-dependent MAIT cell agonist with the characteristic of efficiently activating and enriching mucosal-associated invariant T (MAIT) cells. This compound can be used as a mucosal adjuvant in research on Mycobacterium tuberculosis infection.
Targets(IC50)	Others
In vitro	<b>Methods:</b> Cynomolgus monkey and human PBMCs were stimulated with 10 nM 5-OP-RU for 6 days (proliferation assay); or BAL/blood cells were stimulated with 50 nM 5-OP-RU for 6 hours (functional assay). <b>Results:</b> Cynomolgus monkey MAIT cells effectively proliferated and produced cytokines in vitro, indicating that 5-OP-RU is active in vitro, but in vivo administration led to their functional impairment. [1]
In vivo	<b>Methods:</b> To evaluate the mucosal adjuvant potential of 5-OP-RU, C57BL/6J mice were intranasally inoculated with live Vibrio cholerae or OSP:BSA conjugate vaccine, concurrently administered with 5-A-RU/MGO (5-OP-RU precursor). <b>Results:</b> 5-OP-RU treatment induced significant expansion of lung MAIT cells in mice (2.6% of CD3+ cells), but only modestly enhanced mucosal OSP-IgG antibodies when combined with OSP:BSA, with no significant effect on antibody responses to live bacterial vaccine. [2]

## Solubility Information

Solubility	DMSO: 100 mg/mL (302.76 mM), Sonication is recommended. (H <sub>2</sub> O can inactivate 5-OP-RU's activity) (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	3.0276 mL	15.1378 mL	30.2755 mL
5 mM	0.6055 mL	3.0276 mL	6.0551 mL
10 mM	0.3028 mL	1.5138 mL	3.0276 mL
50 mM	0.0606 mL	0.3028 mL	0.6055 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

Sakai, S., Lora, N.E., Kauffman, K.D. et al. Functional inactivation of pulmonary MAIT cells following 5-OP-RU treatment of non-human primates. *Mucosal Immunol* 14, 1055-1066 (2021).

Owen Jensen, et al. Use of a MAIT activating ligand, 5-OP-RU, as a mucosal adjuvant in a murine model of *Vibrio cholerae* O1 vaccination. *bioRxiv* 2022. 06.17.496603

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Tel: 781-999-4286 E\_mail: info@targetmol.com Address: 34 Washington Street, Wellesley Hills, MA 02481