# TPP-1

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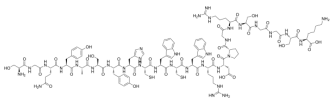
| **Cat. No.:** | HY-P3139 |
| **CAS No.:** | 2426685-25-6 |
| **Molecular Formula:** | $C_{107}H_{150}N_{34}O_{32}S_2$ |
| **Molecular Weight:** | 2488.67 |
| **Sequence Shortening:** | SGQYASYHCWCWRDPGRSGGSK |
| **Target:** | PD-1/PD-L1 |
| **Pathway:** | Immunology/Inflammation |
| **Storage:** | Sealed storage, away from moisture<br>Powder -80°C 2 years<br>-20°C 1 year<br>* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture) |



## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : 50 mg/mL (20.09 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 0.4018 mL | 2.0091 mL | 4.0182 mL |
| | 5 mM | 0.0804 mL | 0.4018 mL | 0.8036 mL |
| | 10 mM | 0.0402 mL | 0.2009 mL | 0.4018 mL |

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

## BIOLOGICAL ACTIVITY

**Description**

TPP-1 is a potent inhibitor of the PD-1/PD-L1 interaction. TPP-1 binds specifically to PD-L1 with a high affinity ($K_D$=95 nM). TPP-1 inhibits human tumor growth in vivo via reactivating T-cell function[1].

**In Vitro**

TPP-1 binds to PD-L1 with high affinity and blocks PD-1/PD-L1 interaction. The $K_D$ value of PD-L1 with TPP-1 peptide is about 95 nmol/L (around five times less than that with PD-1), The binding site of TPP-1 to PD-L1 is close to the interactive site of PD-1 and PD-L1[1].

TPP-1 (4 μM) reactivates T-cell functions, it induces IFNγ release significantly higher than control and SPP-1, and the TPP-1 group shows similar outcomes for cell proliferation[1].

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

**In Vivo**

TPP-1 (subcutaneous injection; 4 mg/kg; every other day eight times; 32 days) inhibits tumor growth (compared with SPP-1 and control). The growth rate in TPP-1-treated mice is 56%. And when administered in the absence of T cells (control group), TPP-1 has no effect on the growth of the H460-luc tumors[1].

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| Animal Model: | 5 to 6-week-old female Balb/c nude mice injected with H460 cells transfected with the plvx-puro/luciferase lentiviral vector[1] |
| Dosage: | 4 mg/kg |
| Administration: | Subcutaneous injection; 4 mg/kg; every other day eight times; 32days |
| Result: | Inhibited the tumor growth in a tumor xenograft model via reactivating T-cell function. |

## REFERENCES

[1]. Chunlin Li, et al. Peptide Blocking of PD-1/PD-L1 Interaction for Cancer Immunotherapy. Cancer Immunol Res. 2018 Feb;6(2):178-188.



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