



# SZABO SCANDIC

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### Zuschläge

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## Pembrolizumab

Cat. No.:	HY-P9902
CAS No.:	1374853-91-4
Molecular Weight:	146266.23
Target:	PD-1/PD-L1
Pathway:	Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

### BIOLOGICAL ACTIVITY

<b>Description</b>	Pembrolizumab (MK-3475) is a humanized IgG4 antibody inhibiting the programmed cell death 1 (PD-1) receptor, used in cancer immunotherapy.																	
<b>IC<sub>50</sub> &amp; Target</b>	IC50: 0.6 nM (PD-1)																	
<b>In Vitro</b>	<p>Pembrolizumab (MK-3475) increases the secretion of cytokines IFN-<math>\gamma</math>, TNF-<math>\alpha</math> and the apoptotic cell death of A549 cells<sup>[2]</sup>.          ?Pembrolizumab improves the <math>\alpha</math>ROR1-CAR T-mediated cytotoxicity, and reduces tumorigenesis in the co-cultured <math>\alpha</math>ROR1-CAR T and A549 cells by blocking PD-1::PD-L1 interaction in <math>\alpha</math>ROR1-CAR T cells<sup>[2]</sup>.          MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Cytotoxicity Assay<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td><math>\alpha</math>ROR1-CAR T and A549 cells</td> </tr> <tr> <td>Concentration:</td> <td>10 <math>\mu</math>g/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>Adding Pembrolizumab after A549-Red-Fluc cells preconditioned in elevated pressure (+ 100 mmHg) for 7 days.</td> </tr> <tr> <td>Result:</td> <td>Enhanced <math>\alpha</math>ROR1-CAR T killing of A549 lung cancer cells under elevated pressure.</td> </tr> </table> <p>Apoptosis Analysis<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>A549 cells</td> </tr> <tr> <td>Concentration:</td> <td>10 <math>\mu</math>g/mL</td> </tr> <tr> <td>Incubation Time:</td> <td></td> </tr> <tr> <td>Result:</td> <td>Increased the apoptotic cell death in A549 cells, and improve the <math>\alpha</math>ROR1-CAR T-mediated cytotoxicity.</td> </tr> </table>		Cell Line:	$\alpha$ ROR1-CAR T and A549 cells	Concentration:	10 $\mu$ g/mL	Incubation Time:	Adding Pembrolizumab after A549-Red-Fluc cells preconditioned in elevated pressure (+ 100 mmHg) for 7 days.	Result:	Enhanced $\alpha$ ROR1-CAR T killing of A549 lung cancer cells under elevated pressure.	Cell Line:	A549 cells	Concentration:	10 $\mu$ g/mL	Incubation Time:		Result:	Increased the apoptotic cell death in A549 cells, and improve the $\alpha$ ROR1-CAR T-mediated cytotoxicity.
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<b>In Vivo</b>	Pembrolizumab inhibits tumor size in A549 xenograft mice pretreated by pressure <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.																	

Animal Model:	Six-week-old male BALB/c athymic nude mice <sup>[2]</sup>
Dosage:	5 mg/kg
Administration:	Pembrolizumab (5 mg/kg; Intravenous injection; Once)
Result:	Reduced tumorigenesis in $\alpha$ ROR1-CAR T cells and co-cultured with A549 cells.

## CUSTOMER VALIDATION

- Immunity. 2024 Feb 13;57(2):256-270.e10.
- J Immunother Cancer. 2022 Mar;10(3):e003667.
- Cell Death Dis. 2021 May 9;12(5):465.
- Cancer Immunol Immunother. 2021 Nov 12.
- ACS Appl Bio Mater. 2020 Sep 21.

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## REFERENCES

- [1]. Zhenglin Ou, et al. Pressure increases PD-L1 expression in A549 lung adenocarcinoma cells and causes resistance to anti-ROR1 CAR T cell-mediated cytotoxicity, Sci Rep
- [2]. Amita Patnaik, et al. Phase I Study of Pembrolizumab (MK-3475; Anti-PD-1 Monoclonal Antibody) in Patients with Advanced Solid Tumors. Clin Cancer Res.2015Oct1;21(19):4286-93.
- [3]. Schachter J, et al. Pembrolizumab versus ipilimumab for advanced melanoma: final overall survival results of a multicentre, randomised, open-label phase 3 study (KEYNOTE-006). Lancet. 2017 Aug 16. pii: S0140-6736(17)31601-X.
- [4]. Amita Patnaik, et al. Phase I Study of Pembrolizumab (MK-3475; Anti-PD-1 Monoclonal Antibody) in Patients with Advanced Solid Tumors. Clin Cancer Res.2015Oct1;21(19):4286-93.

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

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