Cetrelimab

Cat. No.:	HY-P99499
CAS No.:	2050478-92-5
Target:	PD-1/PD-L1; Interleukin Related; TNF Receptor
Pathway:	Immunology/Inflammation; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Cetrelimab (JNJ 63723283; JNJ 3283) is a human IgG4κ mAb targeting PD-1. Cetrelimab binds PD-1 (K_d=1.72 nM, HEK293) to block the interaction of PD-1 with PD-L1 and PD-L2 (IC_{50}s=111.7 ng/mL and 138.6 ng/mL, respectively). Cetrelimab stimulates peripheral T cells, increases IFN-γ, IL-2, TNF-α level and inhibits tumor growth in vivo[1].
IC_{50} & Target	PD-1/PD-L1, PD-1/PD-L2, IFN-γ, IL-2, and TNF-α[1]
In Vitro	Cetrelimab (0.01-30 nM; 5 d) binds to endogenous PD-1 on activated $CD4^+$ and $CD8^+$ T cells with EC_{50}s of 0.16-0.22 μg/mL and 0.17-0.22 μg/mL, respectively[1]. Cetrelimab (0.01-30 μg/mL; 24 h) reverse PD-1-mediated suppression of TCR signaling in Jurkat-PD-1 NFAT reporter cells with CHO-K1 expressing PD-L1[1]. Cetrelimab (0.001-100 nM; 6 d) increases IFN-γ, IL-2, and TNF-α with EC_{50}s of 0.08 ng/mL, 0.07 ng/mL, and 0.02 ng/mL, respectively[1]. Cetrelimab binds to PD-1 in cynomolgus with a K_d value of 0.9 nM[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cetrelimab (10 mg/kg; i.p.; single dose) has antitumor efficacy, and decreases tumor volume in PD-1 knock-in (hPD-1KI) mice with MC38 tumor[1]. Cetrelimab (10 mg/kg; i.p.; once every 5 days for 30 d) results significant increases in peripheral blood $CD8^+$ T cells in patient-derived xenograft (PDX) lung model in mice[1]. Cetrelimab (10-100 mg/kg; i.v.; once weekly for 5 weeks) has well tolerance in cynomolgus model[1]. Cetrelimab (0.1-10 mg/kg; i.v.; single dose, monitored for 57 d) shows an nonlinear pharmacokinetics (PK) in cynomolgus, possibly attributable to target-mediated drug deposition (TMDD)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	hPD-1KI model with mouse PD-1 ECD replaced by the human PD-1 ECD[1]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection; single dose at day 7 after tumor implantation
Result:	hPD-1KI mice develop normally and have no immune abnormalities. Significantly lowered tumor volume at Day 21.

Animal Model:	Patient-derived xenograft (PDX) LG1306 lung model in mice[1]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection; every 5 days for 6 cycles
Result:	Significantly reduced patient-derived tumor volume by 32%.

Animal Model:	Good Laboratory Practice (GLP) toxicity study in cynomolgus[1]
Dosage:	0, 10, 30, or 100 mg/kg
Administration:	Intravenous injection; once weekly for 5 weeks
Result:	Showed well tolerance in cynomolgus.

REFERENCES

[1]. DeAngelis N, et al. Discovery and pharmacological characterization of cetrelimab (JNJ-63723283), an anti-programmed cell death protein-1 (PD-1) antibody, in human cancer models. Cancer Chemother Pharmacol. 2022 Apr;89(4):515-527.

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