Simlukafusp alfa

Cat. No.:	HY-P99902
CAS No.:	1776942-10-9
Target:	Interleukin Related
Pathway:	Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Simlukafusp alfa (FAP-IL2v) is an immunocytokine comprising an antibody against fibroblast activation protein α (FAPα) and an IL-2 variant that only binds IL-2Rβγ. Isotype: human IgG1[1].

In Vitro

Simlukafusp alfa (FAP-IL2v) shows binding affinity constants of 43±9 pM, 80±20 pM, 660±80 pM, 0.3 nM, 0.23 nM and 0.5 nM with huIL-2Rβγ, cyIL-2Rβγ, muIL-2Rβγ, huFAP, cyFAP and muFAP, respectively[1].
Simlukafusp alfa (0-100 nM; 5 days) activates CD4+/CD8+ T cells and NK cells in vitro, but not preferentially Tregs[1].
Simlukafusp alfa (0-100 nM) enhances Cetuximab (HY-P9905)-mediated antibody-dependent cellular cytotoxicity (ADCC) and Cibisatamab (HY-P99011)-mediated T-cell-dependent cellular cytotoxicity (TDCC) in vitro[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	NK cells, CD4+ and CD8+ T cells
Concentration:	0-100 nM
Incubation Time:	5 days
Result:	Induced a dose-dependent proliferation of resting NK cells and resting and activated CD4+ and CD8+ T cells within peripheral blood mononuclear cells (PBMCs).

In Vivo

Simlukafusp alfa (FAP-IL2v) (1 mg/kg; i.v.; weekly for 4 weeks) is efficacious in combination with therapeutic antibodies in murine models of human cancer[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	huCD16-transgenic SCID mice, lung orthotopic xenograft A549 model[1]
Dosage:	1 mg/kg in combination with 25 mg/kg Cetuximab (HY-P9905) as single agents
Administration:	IV, weekly starting at Day 14 for 4 weeks
Result:	Achieved greater tumor control than either agent given as monotherapy. Reduced tumor volume and tumor growth.

Animal Model:	CD-1 mice[1]
Dosage:	1, 2 or 4 mg/kg
Administration:	IV (Pharmacokinetic Analysis)
Result:	Pharmacokinetic parameters after first dose of human FAP-IL2v (huFAP-IL2v) in CD-1 mice CD-1 mice (n=10 per group) were given 1, 2, and 4 mg/kg huFAP-IL2v by IV administration once weekly. Multiple IV doses at 1 and 2 mg/kg were administered QW for up to a maximum of three doses, at which point toxicity was observed. Only a single dose was administered to the 4-mg/kg IV treatment group because of toxicity in these treatment groups. Blood was sampled at 0.5, 6, 24, 48, 72, and 168 h.

huFAP-IL2v dose (mg/kg)	C_{max} (μg/mL)	$AUC_{0\text{-}168h}$ (μg•h/mL per mg/kg)	CL (mL/d/kg)
1	19.0	557	40.0
2	36.3	479	46.8
4	78.7	541	38.7

$AUC_{0\text{-}168h}$, area under the concentration-time curve from 0 to 168 hours; C_{max}, maximum serum concentration observed; CL, total clearance; FAP-IL2v, fibroblast activation protein-α -targeted interleukin 2 variant (IL2v) immunocytokine; hu, humanized; IV, intravenous.

REFERENCES

[1]. Waldhauer I, et al. Simlukafusp alfa (FAP-IL2v) immunocytokine is a versatile combination partner for cancer immunotherapy. MAbs. 2021 Jan-Dec;13(1):1913791.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA