Data Sheet (Cat.No.T77169)

TargetMol

Simlukafusp alfa

Chemical Properties

CAS No. : 1776942-10-9

Formula:

Molecular Weight: 159.66 kDa

Storage: Store at low temperature
-20°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Simlukafusp alfa (FAP-IL2v) is a tumor-targeting immunocytokine and a human antibody with antitumor activity and immunostimulatory properties. It enhances the in vitro and in vivo activity of therapeutic antibodies that mediate antibody-dependent or T-cell-dependent cytotoxicity (TDCC) and inhibit the programmed death-ligand 1 (PD-L1) checkpoint. Simlukafusp alfa is intended for use in the study of solid tumors and the tumor immune microenvironment.
Targets(IC50)	Interleukin
In vitro	The binding constants of Simlukafusp alfa for IL-2Rβγ and FAP receptors from different species are as follows: huIL-2Rβγ: 43 pM; cyIL-2Rβγ: 80 pM; muIL-2Rβγ: 660 pM; huFAP: 0.3 nM; cyFAP: 0.23 nM; muFAP: 0.5 nM. In vitro, Simlukafusp alfa (0-100 nM; treated for 5 days) activated CD4+ and CD8+ T cells as well as NK cells, but did not preferentially activate Tregs. Furthermore, Simlukafusp alfa (0-100 nM) enhanced Cetuximab-mediated antibody-dependent cellular cytotoxicity (ADCC) and Cibisatamab-mediated T-cell-dependent cytotoxicity (TDCC) in vitro. [1] Methods: Human primary $CD4^+$ T cells were isolated, coated with anti-CD3 (0.125 μg/mL), and stimulated with Simlukafusp alfa (0.4/4.0/40.4 nM) for 3 days; IL-2 levels in the supernatant were measured by ELISA. Results: Simlukafusp alfa promoted IL-2 secretion in a dose-dependent manner. [2] Methods: Human PBMCs were labeled with Far Red dye and seeded into anti-CD3-coated culture plates. They were cultured for 96 hours with Simlukafusp alfa (starting concentration 100 nM, 3-fold dilution gradient), and the proliferation rates of $CD4^+$ and $CD8^+$ T cells were measured by flow cytometry. Results: Simlukafusp alfa significantly promoted the proliferation of $CD4^+$ and $CD8^+$ T cells.[2]
In vivo	In a mouse model of human cancer, Simlukafusp alfa administered intravenously at a dose of 1 mg/kg once weekly for 4 consecutive weeks demonstrated significant efficacy when used in combination with a therapeutic antibody. [1] Methods: A tumor model was established in humanized NOG mice by co-transplanting LoVo cells and human PBMCs. When tumor volume reached 50 mm^3, Simlukafusp alfa was administered intraperitoneally at a dose of 10 mg/kg on days 3, 7, 11, and 14-15 post-tumor implantation. Tumor volume was monitored using a caliper.

In vivo	Results: Simlukafusp alfa demonstrated significant antitumor effects, had no significant impact on body weight, and exhibited good safety. [2] Methods: Rhesus monkeys were administered Simlukafusp alfa intravenously (10/50/200 mg/kg, once weekly for a total of 5 doses), followed by a 4-week recovery period; clinical symptoms, body weight, hematology, biochemistry, and histopathology were monitored. Results: At the highest dose, Simlukafusp alfa showed no drug-related adverse reactions, organ damage, immunotoxicity, or pathological changes, demonstrating excellent tolerability. [2]

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.0063 mL	0.0313 mL	0.0626 mL
5 mM	0.0013 mL	0.0063 mL	0.0125 mL
10 mM	0.0006 mL	0.0031 mL	0.0063 mL
50 mM	0.0001 mL	0.0006 mL	0.0013 mL

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.