Milatuzumab

Cat. No.: HY-P99731

CAS No.: 899796-83-9

Target: CD74

Pathway: Immunology/Inflammation

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Milatuzumab (hLL1; MEDI-115) is a humanized anti-CD74 monoclonal antibody. CD74, a integral membrane protein, is associated with the promotion of B-cell growth and survival. Milatuzumab causes free radical oxygen generation, and loss of mitochondrial membrane potential. Milatuzumaba also decreases CD20/CD74 aggregates and cell adhesion, to lead to cell death[1].

IC_{50} & Target

CD74[1]

In Vitro

Milatuzumaba (5 μg/mL; 8-48 h) enhances cell death in MCL cell lines and primary patient tumor cells[1].
Milatuzumaba (5 μg/mL; 0.5-2 h) mediates the cytotoxicity partially depending on generation of ROS and loss of mitochondrial transmembrane potential in Jeko, Mino, and SP-53 cells[1].
Milatuzumaba (5 μg/mL; 4 h) inhibits NF-κB pathway and induces cell apoptosis with independent of caspase cleavage, Bcl-2 family member dysregulation, or induction of autophagy[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	Jeko and Mino cells
Concentration:	5 μg/mL
Incubation Time:	4 hours
Result:	Insignificant down-regulation of antiapoptotic proteins, such as Bax, Bcl-2, Bcl-xL, and Mcl-1.

Cell Viability Assay[1]

Cell Line:	MCL cell lines and primarypatient tumor cells
Concentration:	5 μg/mL
Incubation Time:	8, 24, and 48 hours
Result:	Resulted in cell death of Jeko, Mino, SP-53, Rec-1, HBL-2, and Granta cells.

Immunofluorescence[1]

Cell Line:	Jeko, Mino, and SP-53 cells
Concentration:	5 μg/mL; with or without 10 mM N-acetylcysteine (HY-B0215) for 1.5 h
Incubation Time:	0.5, 1, 1.5, and 2 hours
Result:	Increased ROS generation as early as 0.5 hours, while peaking at 1 to 1.5 hours and reducing at 2 hours.Therefore, it resulted cell death, but reserved by nonspecific ROS scavenger.

In Vivo

Milatuzumaba (15 mg/kg/day; i.p.; once every 3 days) significantly increases the survival rate of female SCID mice bearing Jeko cells. And Milatuzumaba has a synergistic effect with Rituximab (HY-P9913) in mouse model[1].

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Animal Model:	Jeko mouse model[1]
Dosage:	15 mg/kg/day; with or without 15 mg/kg Rituximab
Administration:	Intraperitoneal injection; once every 3 days, starting at day 15 after engraftment
Result:	Resulted the mean survival for the combination treated group of 44.5 days, compared with 33.5 days for Milatuzumaba treated, 28 days for control.

CUSTOMER VALIDATION

- bioRxiv. 2023 Nov 13.

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REFERENCES

[1]. Alinari L, et al. Combination anti-CD74 (milatuzumab) and anti-CD20 (rituximab) monoclonal antibody therapy has in vitro and in vivo activity in mantle cell lymphoma. Blood. 2011 Apr 28;117(17):4530-41.

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