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Milatumzumab

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	Milatumzumab (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. Milatumzumab causes free radical oxygen generation, and loss of mitochondrial membrane potential. Milatumzumaba also decreases CD20/CD74 aggregates and cell adhesion, to lead to cell death ^[1] .																
IC₅₀ & Target	CD74 ^[1]																
In Vitro	<p>Milatumzumaba (5 µg/mL; 8-48 h) enhances cell death in MCL cell lines and primary patient tumor cells^[1].</p> <p>Milatumzumaba (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].</p> <p>Milatumzumaba (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].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Jeko and Mino cells</td> </tr> <tr> <td>Concentration:</td> <td>5 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>4 hours</td> </tr> <tr> <td>Result:</td> <td>Insignificant down-regulation of antiapoptotic proteins, such as Bax, Bcl-2, Bcl-xL, and Mcl-1.</td> </tr> </table> <p>Cell Viability Assay^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>MCL cell lines and primary patient tumor cells</td> </tr> <tr> <td>Concentration:</td> <td>5 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>8, 24, and 48 hours</td> </tr> <tr> <td>Result:</td> <td>Resulted in cell death of Jeko, Mino, SP-53, Rec-1, HBL-2, and Granta cells.</td> </tr> </table> <p>Immunofluorescence^[1]</p>	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 Line:	MCL cell lines and primary patient 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.
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	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] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	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.

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

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