

Abatacept

Cat. No.:	HY-108829
CAS No.:	332348-12-6
Target:	CTLA-4
Pathway:	Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Abatacept (CTLA4lg) is a soluble fusion protein consisting of the extra-cellular domain of human CTLA4 and a fragment of the Fc portion of human IgG1 (hinge and CH2 and 3 domains) ^[1] . Abatacept is a selective T-cell co-stimulation modulator and a protein agent for the autoimmune diseases ^{[1][2][3]} .																
In Vivo	<p>Abatacept reduces paw edema, and the SC Multiple-dose group shows significantly greater ($t_{obs} = 2.50$) paw edema reduction compared with the IV dose group^[2].</p> <p>Abatacept exhibits linear PK across the studied doses. The NCA clearance (CL) is 20.8 mL/day/kg, volume (V_{ss}) is 146 mL/kg, and bioavailability (F) of the SC dose dosing is 57.7%^[2].</p> <p>Abatacept (oral; 10 mg/kg; every 2 days) reduces the proportion of activated T cells (CD44^{high}CD62L⁻) and inhibits the up-regulation of ICOS and CD71 in homozygous DO11.10 RAG-2^{-/-} BALB/c (H-2d/d) mice^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Animal Model:</td> <td>Male Lewis rats (6-9 weeks old) with weights of 150-175 g^[2]</td> </tr> <tr> <td>Dosage:</td> <td>10 mg/kg (IV), 20 mg/kg (SC single-dose), 20 mg/kg (SC Multiple-dose) on day 21 with 10 mg/kg SC doses on days 23, 25, 27, and 29</td> </tr> <tr> <td>Administration:</td> <td>IV or SC</td> </tr> <tr> <td>Result:</td> <td>Reduced paw edema, and the SC Multiple-dose group showed significantly greater ($t_{obs} = 2.50$) paw edema reduction compared with the IV dose group.</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Animal Model:</td> <td>Male Lewis rats (6-9 weeks old) with weights of 150-175 g^[2]</td> </tr> <tr> <td>Dosage:</td> <td>10 mg/kg (IV), 20 mg/kg (SC single-dose), 20 mg/kg (SC Multiple-dose) on day 21 with 10 mg/kg SC doses on days 23, 25, 27, and 29 (Pharmacokinetic Study)</td> </tr> <tr> <td>Administration:</td> <td>IV or SC</td> </tr> <tr> <td>Result:</td> <td>The NCA clearance (CL) is 20.8 mL/day/kg, volume (V_{ss}) is 146 mL/kg, and bioavailability (F) of the SC dose dosing is 57.7%.</td> </tr> </table>	Animal Model:	Male Lewis rats (6-9 weeks old) with weights of 150-175 g ^[2]	Dosage:	10 mg/kg (IV), 20 mg/kg (SC single-dose), 20 mg/kg (SC Multiple-dose) on day 21 with 10 mg/kg SC doses on days 23, 25, 27, and 29	Administration:	IV or SC	Result:	Reduced paw edema, and the SC Multiple-dose group showed significantly greater ($t_{obs} = 2.50$) paw edema reduction compared with the IV dose group.	Animal Model:	Male Lewis rats (6-9 weeks old) with weights of 150-175 g ^[2]	Dosage:	10 mg/kg (IV), 20 mg/kg (SC single-dose), 20 mg/kg (SC Multiple-dose) on day 21 with 10 mg/kg SC doses on days 23, 25, 27, and 29 (Pharmacokinetic Study)	Administration:	IV or SC	Result:	The NCA clearance (CL) is 20.8 mL/day/kg, volume (V_{ss}) is 146 mL/kg, and bioavailability (F) of the SC dose dosing is 57.7%.
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REFERENCES

- [1]. Kiykim A, et al. Abatacept as a Long-Term Targeted Therapy for LRBA Deficiency. J Allergy Clin Immunol Pract. 2019 Jun 22.
- [2]. Lon HK, et al. Modeling pharmacokinetics/pharmacodynamics of abatacept and disease progression in collagen-induced arthritic rats: a population approach. J Pharmacokinet Pharmacodyn. 2013 Dec;40(6):701-12.
- [3]. Patakas A, et al. Abatacept Inhibition of T Cell Priming in Mice by Induction of a Unique Transcriptional Profile That Reduces Their Ability to Activate Antigen-Presenting Cells. Arthritis Rheumatol. 2016 Mar;68(3):627-38.
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Caution: Product has not been fully validated for medical applications. For research use only.

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