Technical Data Sheet

RecombiMAb anti-mouse CTLA-4 (CD152)

Attention: Use of this product constitutes an agreement to Bio X Cell's Terms and Conditions which are included with this product in print and can also be found at https://bioxcell.com/terms-and-conditions.

Lot Specific Information

Lot Number: **Lot Specific***
Volume: **Lot Specific***
Concentration: **Lot Specific* (generally 4 to 11 mg/ml) ***
Total Protein: **Lot Specific***

*This information will be noted on the certificate of analysis that ships with this product.

Product Information

Catalog Number:	**CP093**
Clone:	**9D9-CP093**
Isotype:	Mouse IgG2c, κ
Recommended Isotype Control(s):	InVivoPlus mouse IgG2c isotype control, anti-dengue virus
Recommended Dilution Buffer:	InVivoPure pH 7.0 Dilution Buffer
Immunogen:	Not available or unknown
Reported Applications:	*in vivo* CTLA-4 neutralization *in vivo* intra-tumoral regulatory T cell depletion ELISA
Formulation:	PBS, pH 7.0 Contains no stabilizers or preservatives
Endotoxin:	≤0.5EU/mg (≤0.0005EU/μg) Determined by LAL assay
Purity:	≥95% Determined by SDS-PAGE
Sterility:	0.2 μm filtration
Production:	Purified from mammalian cell supernatant in an animal-free facility
Purification:	Protein A
Aggregation:	<5% Determined by SEC
RRID:	
Molecular Weight:	150 kDa

Murine Pathogen Test Results

Mouse Norovirus: Negative, Mouse Parvovirus: Negative, Mouse Minute Virus: Negative, Mouse Hepatitis Virus: Negative, Reovirus Screen: Negative, Lymphocytic Choriomeningitis virus: Negative, Lactate Dehydrogenase-Elevating Virus: Negative, Mouse Rotavirus: Negative, Theiler's Murine Encephalomyelitis: Negative, Ectromelia/Mousepox Virus: Negative, Hantavirus: Negative, Polyoma Virus: Negative, Mouse Adenovirus: Negative, Sendai Virus: Negative, Mycoplasma Pulmonis: Negative, Pneumonia Virus of Mice: Negative, Mouse Cytomegalovirus: Negative, K Virus: Negative

Description

The 9D9-CP093 monoclonal antibody is a recombinant, Fc-engineered chimeric version of the original 9D9 antibody. The variable domain sequences are identical but the constant region sequences have been switched from mouse IgG2b to mouse IgG2c. Recombinant 9D9 that has been isotype switched to either mouse IgG2a or IgG2c has demonstrated improved Fc effector function resulting in potent depletion of intratumoral Tregs, increased activation of CD8+ T cells, increased tumor-associated high endothelial venules (TA-HEVs), and increased tumor-draining lymph node priming resulting in superior antitumor efficacy through Fc-dependent mechanisms compared to the original IgG2b antibody. Isotype switching amplified ADCC/ADCP via high-affinity binding to activating FcγRs, combining CTLA-4 blockade with Treg elimination for

robust antitumor immunity. Mouse IgG2a and IgG2c are allelic variants of the same isotype, differing by strain-specific genetics, and are indistinguishable in their specificities to murine FcγR. Both mouse IgG2a and IgG2c have broader and higher-affinity interactions with activating FcγRs than mouse IgG2b. Mouse strains such as C57Bl/6, C57Bl/10, SJL, and NOD mice possess the Igh1-b allele resulting in only the expression of IgG2c. However, mouse strains such as BALB/c and Swiss Webster mice possess the Igh1-a allele which results in only the expression of IgG2a. It is important to consider matching the Ig-haplotype of the receiving mice to the isotype of the injected antibody to avoid eliciting an undesired immune response and ensure better antibody tolerance, pharmacokinetics, and efficacy. The highly controlled sequence and lack of genetic drift in recombinant antibodies provide more reliable and reproducible results over hybridoma derived antibodies. The 9D9 monoclonal antibody is a commonly used surrogate for CTLA-4 checkpoint blockade studies in mouse cancer models. It reacts with mouse CTLA-4 (cytotoxic T lymphocyte antigen-4) also known as CD152. Bates, Amber M et al. “Combination of Bempegaldesleukin and Anti-CTLA-4 Prevents Metastatic Dissemination After Primary Resection or Radiotherapy in a Preclinical Model of Non-Small Cell Lung Cancer.” Frontiers in oncology vol. 11 645352. 15 Apr. 2021, doi:10.3389/fonc.2021.645352 Blanchard, Lucas et al. “Fc-optimized anti-CTLA-4 antibodies increase tumor-associated high endothelial venules and sensitize refractory tumors to PD-1 blockade.” Cell reports. Medicine vol. 6,6 (2025): 102141. doi:10.1016/j.xcrm.2025.102141 Kerr, Caroline P et al. “Priming versus propagating: distinct immune effects of an alpha- versus beta-particle emitting radiopharmaceutical when combined with immune checkpoint inhibition.” bioRxiv : the preprint server for biology 2024.12.26.630430. 26 Dec. 2024, doi:10.1101/2024.12.26.630430. Preprint. Rakhmilevich, Alexander L et al. “A combined radio-immunotherapy regimen eradicates late-stage tumors in mice.” Frontiers in immunology vol. 15 1419773. 15 Jul. 2024, doi:10.3389/fimmu.2024.1419773 Selby, Mark J et al. “Anti-CTLA-4 antibodies of IgG2a isotype enhance antitumor activity through reduction of intratumoral regulatory T cells.” Cancer immunology research vol. 1,1 (2013): 32-42. doi:10.1158/2326-6066.CIR-13-0013

Storage

Store at the stock concentration at 4°C . **Do not freeze.**
It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at https://bioxcell.com/faqs.

Protocol Information

Since applications vary, each investigator should use the application references as a guide to help estimate the appropriate dose or concentration. The dose or concentration can be further optimized experimentally in a dose response or titration experiment.

Application References

For a complete list of references, visit https://bioxcell.com/cp093?bxcs=9k1b3a#tab_references or scan the QR code below.

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