

Technical Data Sheet

InVivoSIM anti-human PD-1 (Nivolumab Biosimilar)



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: SIM0003
Clone: Nivolumab
Isotype: Human IgG4
Recommended Isotype Control(s): RecombiMAb human IgG4 (S228P) isotype control, anti-hen egg lysozyme
Recommended Dilution Buffer: InVivoPure pH 7.0 Dilution Buffer
Mutations: S228P
Immunogen: Human PD-1
Reported Applications: *in vitro* PD-1 neutralization
in vivo blocking of PD-1/PD-L signaling
in vitro functional assay
in vivo functional assay
Flow Cytometry
Immunohistochemistry
Western Blot
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 cell culture supernatant in an animal-free facility
Purification: Protein A
Aggregation: <5%
Determined by SEC
RRID: [AB_2894724](https://rrid.info/AB_2894724)
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

This non-therapeutic biosimilar antibody uses the same variable regions from the therapeutic antibody Nivolumab making it

ideal for research use. This Nivolumab biosimilar reacts with human PD-1 (programmed death-1) also known as CD279. Nivolumab has been engineered as a humanized IgG4 monoclonal antibody to reduce its non-specific binding to Fc receptors. Nivolumab has a hinge mutation, S228P, which prevents IgG4 Fab exchange, thereby improving stability. PD-1 is a 50-55 kDa cell surface receptor encoded by the *Pdcd1* gene that belongs to the CD28 family of the Ig superfamily. PD-1 is transiently expressed on CD4 and CD8 thymocytes as well as activated T and B lymphocytes and myeloid cells. PD-1 expression declines after successful elimination of antigen. Additionally, *Pdcd1* mRNA is expressed in developing B lymphocytes during the pro-B-cell stage. PD-1's structure includes a ITIM (immunoreceptor tyrosine-based inhibitory motif) suggesting that PD-1 negatively regulates TCR signals. PD-1 signals via binding its two ligands, PD-L1 and PD-L2 both members of the B7 family. Upon ligand binding, PD-1 signaling inhibits T-cell activation, leading to reduced proliferation, cytokine production, and T-cell death. Additionally, PD-1 is known to play key roles in peripheral tolerance and prevention of autoimmune disease. Induced PD-L1 expression is common in many tumors including squamous cell carcinoma, colon adenocarcinoma, and breast adenocarcinoma. PD-L1 overexpression results in increased resistance of tumor cells to CD8 T cell mediated lysis. PD-L1 overexpression results in increased resistance of tumor cells to CD8 T cell mediated lysis. In experimental models of melanoma, tumor growth can be transiently arrested via treatment with antibodies which block the interaction between PD-L1 and its receptor PD-1. For these reasons anti-PD-1 mediated immunotherapies are currently being used as cancer treatments. Nivolumab binds to PD-1 on activated immune cells to selectively block the interaction of PD-1 with its ligands.

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

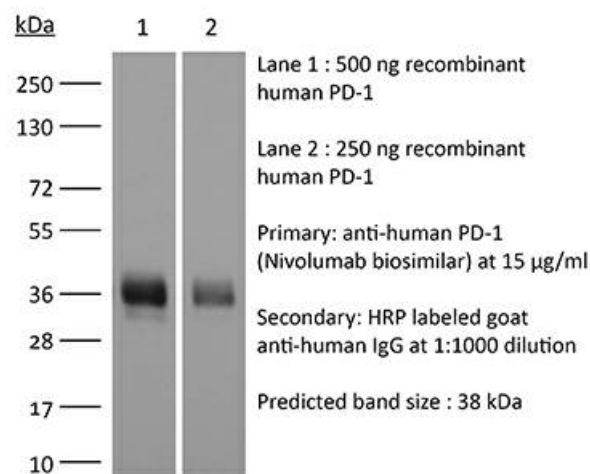
https://bioxcell.com/sim0003?bxcs=9k1b3a#tab_references

or scan the QR code below.



Binding Validation

Validation data shown below confirms that this clone binds to its target antigen. For lot specific binding validation data, e-mail technicalservice@bioxcell.com.



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