Technical Data Sheet

InVivoMAb anti-Powassan virus E protein

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:	**BE0434**
Clone:	**POWV-63**
Isotype:	Mouse IgG2c, κ
Recommended Dilution Buffer:	InVivoPure pH 7.0 Dilution Buffer
Immunogen:	POWV strain SPO or POWV mRNA vaccine
Reported Applications:	*in vivo* protection against POWV *in vitro* neutralization of POWV Antibody Dependent Enhancement (ADE) Foci reduction neutralization test (FRNT) Flow cytometry ELISA
Formulation:	PBS, pH 7.0 Contains no stabilizers or preservatives
Endotoxin:	<2EU/mg (<0.002EU/μg) Determined by LAL gel clotting 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
RRID:	
Molecular Weight:	150 kDa

Description

The POWV-63 monoclonal antibody reacts with the envelope (E) protein of Powassan virus (POWV), a tick-borne flavivirus (TBFV), which causes severe to fatal neurological disease in humans. Approximately 10–15% of neuroinvasive POWV infections result in death, and over half of those who survive suffer from significant long-term neurological consequences. The E protein of mammalian TBFVs exhibits approximately 70% sequence similarity, and many of them, such as POWV and tick-borne encephalitis virus (TBEV), are associated with inflammation of the brain. Interest in this research area has been spurred by the lack of vaccinations, and many POWV-neutralizing antibodies (e.g., POWV-63, POWV-80, POWV-4, etc.) have been developed. The POWV-63 antibody has been reported to exhibit potent inhibition (EC50 < 10 ng/ml) of POWV infection in Raji-DCSIGN-R cells, which were treated with C-prM-E proteins of the POWV lineage II strain P0375-based reporter virus particles (RVPs). The specificity of this antibody was verified with hydrogen-deuterium exchange mass spectrometry (HDX-MS) and ELISA against recombinant POWV E protein. The POWV-63 antibody was found to detect an epitope containing or proximal to the DII fusion loop, and this detection requires an intact DII fusion loop. The flow cytometry of TBEV, LGTV, and GGYV C-prM-E-transfected cells depicted a significant cross-reactivity of the POWV-63 antibody with these flaviviruses. Several in vitro experiments showed the neutralization activity of the POWV-63 antibody against DENV-2,

SLEV, and ZIKV RVPs as well. Interestingly, this antibody exhibited antibody-dependent enhancement (ADE) effects on mosquito-borne flavivirus (MBFV) infection in K562 cells. Recently, an in vivo experimental study demonstrated that the POWV-63 monoclonal antibody blocks the post-attachment steps in the viral life cycle. In C57BL/6J mice-based in vivo studies, POWV-63 offered significant protection against POWV-SPO, TBFVs, and Langat virus (LGTV).

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.

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