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Datasheet for 200-401-C11S

OspC Antibody

Overview

Description:	Anti-OspC (RABBIT) Antibody - 200-401-C11S
Item No.:	200-401-C11S
Size:	25 µL
Applications:	ELISA, WB, IF
Reactivity:	Borrelia burgdorferi
Host Species:	Rabbit

Product Details

Background:	Outer Surface Protein C, or OspC, is a 20.7 kDa immunogenic protein on the outer surface of the spirochete Borrelia burgdorferi. Its function is not known, but it is located with lipid-anchoring sites on the outer cell membrane.
Synonyms:	rabbit anti-OspC Antibody, Borrelia burgdorferi OspC, PC, Outer Surface Protein C, BB_B19
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	ospC
Reactivity:	Borrelia burgdorferi
Immunogen Type:	Recombinant Protein
Immunogen:	MBP-fusion protein corresponding to Borrelia burgdorferi OspC protein.
Purity/Specificity:	This product was Protein-A purified and cross-adsorbed against MBP from monospecific antiserum by chromatography. This antibody is specific for Borrelia burgdorferi OspC protein. A BLAST analysis was used to suggest cross-reactivity with p39 from B. burgdorferi, afzelii, and valaisiana sources based on 100% homology with the immunizing sequence. Partial reactivity is expected against B. japonica and americana sources based on 94% homology. Cross-reactivity with OspC from other sources has not been determined.

Relevant Links:	• UniProtKB - Q07337 • NCBI - WP_010890595.1 • GeneID - 1194415

Application Details

Tested Applications:	ELISA, WB
Suggested Applications:	IF (Based on references)
Application Note:	This protein-A purified antibody has been tested for use in Western blotting and ELISA. Specific conditions for reactivity should be optimized by the user. Expect a band approximately 20.7 kDa in size corresponding to Borrelia burgdorferi OspC protein by Western blotting in the appropriate cell lysate or extract.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:1,000
WB:	1:1,000

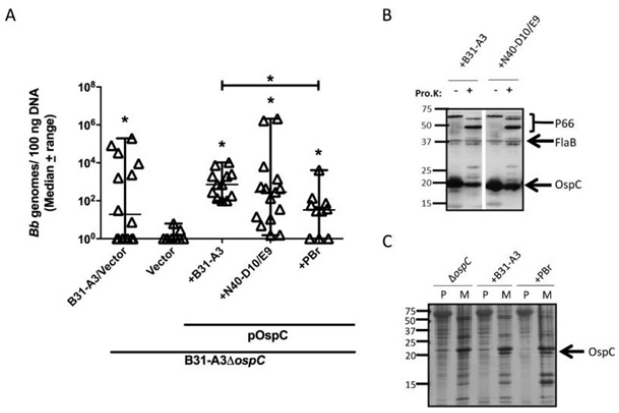
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.22 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

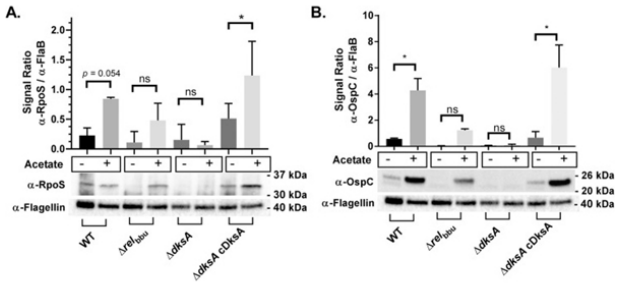
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C or below prior to opening. This vial contains a relatively low volume of reagent (25 µL). To minimize loss of volume dilute 1:10 by adding 225 µL of the buffer stated above directly to the vial. Recap, mix thoroughly and briefly centrifuge to collect the volume at the bottom of the vial. Use this intermediate dilution when calculating final dilutions as recommended below. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing.
Expiration:	Expiration date is three (3) months from date of receipt.

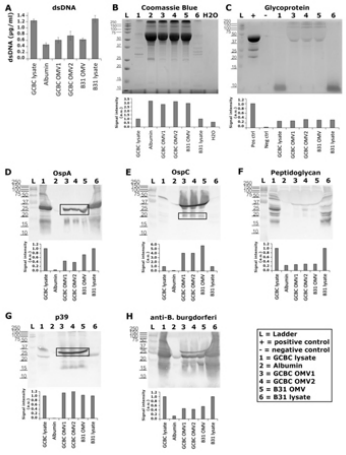
Images



Western Blot
(A) C3H/HeN mice were retro-orbitally inoculated with infectious B. burgdorferi strain B31-A3 (B31-A3/Vector) (n=15), B31-A3ΔospC+vector (Vector)(n=9), or B31-A3ΔospC constitutively expressing ospC alleles from B. burgdorferi strain B31-A3 (+B31-A3)(n=12), N40 clone D10/E9 (+N40-D10/E9)(n=15), or B. garinii strain PBr (+PBr) (n=10). Production of OspC from B31-A3 and N40 restored bloodstream survival to similar levels at 1 hr. post inoculation, while OspC from B. garinii strain PBr restored bloodstream survival to a reduced level. Statistical significance determined by Mann-Whitney unpaired t-test. *=Statistically significantly different than ospC mutant, p-value <0.05. #= Statistically significant difference between +B31-A3 and +PBr, p-value <0.05.
(B) Surface exposure of the exogenously expressed ospC alleles was confirmed by incubating B. burgdorferi expressing each allele, from the flaB promoter, with proteinase K (+) or buffer (−). Confirmation of bacterial cell integrity is shown by the presence of intact flagellin with and without proteinase K. Sensitivity of the membrane protein, P66, is seen in the presence of proteinase K. (C) Silver stain of membrane extracts from B. burgdorferi OspC derivatives separated by 15% SDS-PAGE. Arrow indicates OspC, (M) indicates membrane fraction, (P) indicates non-membrane fraction. Fig 2.
PMID: 28873507

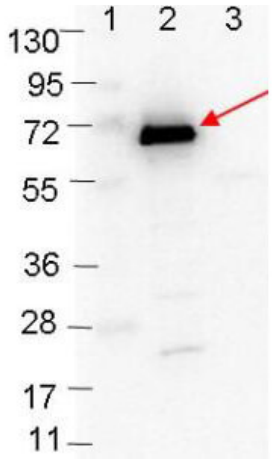


Western Blot
Whole cell lysates were collected from B. burgdorferi 297 strain cultured to 5 x 107 spirochetes/mL in either BSKII-pH 7.6 (acetate -) or BSKII-pH 6.7 with 20 mM acetate (acetate +). Expression of RpoS (A) and OspC (B) protein levels were determined by normalizing densitometry of chemiluminescence signals obtained from western blot to signals obtained from flagellin. Data are representative of 3 replicate experiments. Asterisk indicate adjusted p-values < 0.05 in a Sidak multiple comparisons test. Fig 4.
PMID: 33600418



Western Blot

B. burgdorferi outer membrane vesicles contained several antigenic markers. (A) BbOMVs contained double stranded DNA, which was measured using a Qubit 2.0 fluorometer with a broad-range stain. Standard deviations from triplicate experiments. (B) Proteins were resolved with SDS-PAGE and stained with Coomassie Blue, while a Pierce Glycoprotein staining kit (Thermo scientific) was used for visualizing glycoproteins (C). Western blot analysis demonstrated known borrelial antigens OspA (D), OspC (E), peptidoglycan (F), and p39 (G). Anti-B. burgdorferi whole cell antibody was examined as a control (H). For the protein analysis, H2O was used as a negative control, and albumin (lane 2) as a positive control, for the staining. The negative (−, soybean trypsin inhibitor) and positive (+, horseradish peroxidase) controls provided by the glycoprotein staining kit were employed in the analysis. In the Western blots, albumin was utilized as a negative control for the immunolabel. B. burgdorferi strains GCBC (lane 1) and B31 (lane 6) bacterial cell lysates were used as positive controls for the labels in each experiment. Lanes 3 and 4 demonstrate BbOMVs purified from CGBC culture, while lane 5 has B31 purified BbOMVs. In order to obtain the full range of signals, the intensity values were analyzed from each lane in the Coomassie Blue and glycoprotein gels, as well as in the peptidoglycan and anti-B. burgdorferi labeled blots. Whereas the signals from specific bands representing each expected protein (black box) in OspA, OspC, and p39 blots were examined. Values were normalized to the positive controls: borrelial cell lysates in Coomassie Blue stained gel and western blots, and the kit provided positive control (horseradish peroxidase) in the glycoprotein gel. GCBC BbOMVs and albumin were normalized to GCBC lysates, and the B31 BbOMVs to the B31 lysate. Representative images from three separate experiments. Fig 3. PMID: 35208666



Western Blot
Western blot showing detection of 0.1 µg of recombinant OspC protein. Lane 1: Molecular weight markers. Lane 2: MBP-OspC fusion protein (arrow; expected MW: 63.1 kDa). Lane 3: MBP alone. Protein was run on a 4-20% gel, then transferred to 0.45 µm nitrocellulose. After blocking with 1% BSA-TTBS (p/n MB-013, diluted to 1X) overnight at 4°C, primary antibody was used at 1:1000 at room temperature for 30 min. HRP-conjugated Goat-Anti-Rabbit (p/n 611-103-122) secondary antibody was used at 1:40,000 in MB-070 blocking buffer and imaged on the VersaDoc™ MP 4000 imaging system (Bio-Rad).

References

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- Salverda, Merijn Louis Marten (Amsterdam, NL), Van Der, Ley Peter André (Utrecht, NL) Surface display of antigens on Gram-negative outer membrane vesicles. *patent:20200197308* (2020)
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