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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

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Datasheet for 000-001-C11

OspC Control Protein

Overview

Description:	OspC Control Protein - 000-001-C11
Item No.:	000-001-C11
Size:	100 µg
Applications:	SDS-PAGE, WB, Biochemical Assay
Origin:	Borrelia burgdorferi
Expressed in:	E. coli

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. Lyme disease proteins are ideal for researchers interested in immunology, neurology, rheumatology, coinfections, autoimmune, and neurodegenerative diseases.
Synonyms:	OspC, Borrelia burgdorferi OspC, PC, Outer Surface Protein C, control protein
Species of Origin:	Borrelia burgdorferi
Expressed in:	E. coli
Type:	Recombinant Protein

Target Details

Gene Name:	ospC, BB_B19
Purity/Specificity:	OspC is a fusion protein with an MBP tag and was expressed in E. coli. Analysis by SDS-PAGE resulted in a pattern consistent with purified OspC and was estimated to be greater than 90% pure.
Relevant Links:	• UniProtKB - Q07337 • NCBI - WP_010890595.1 • GeneID - 1194415

Application Details

Tested Applications:	SDS-PAGE, WB
Suggested Applications:	Biochemical Assay (Based on references)
Application Note:	OspC is suitable as a control in immunological assays. Specific conditions for reactivity should be optimized by the end user. Expect a band at 63.1 kDa for OspC-MBP, (20.7 kDa for OspC and 42.4 for MBP) in size corresponding to OspC by Western blotting in the appropriate cell lysate or extract. Outer Surface Protein C has been tested in SDS-page and western blot.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	User Optimized
WB:	User Optimized

Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.0 mg/mL by modified Lowry assay
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 prior to opening. Aliquot contents and freeze at -20 °C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. Dilute only prior to immediate use.
Expiration:	Expiration date is six (6) months from date of receipt.

Images

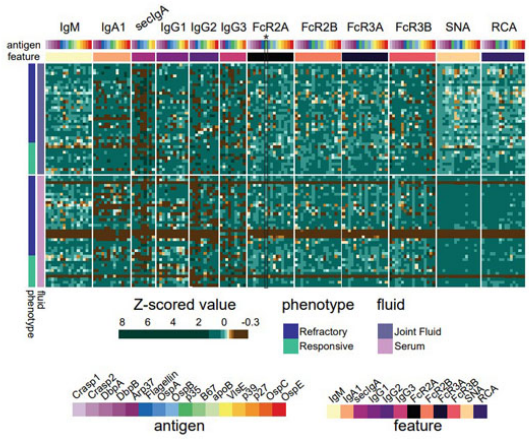


Figure
Systems serology profiling with Borrelia-specific antigens reveals patient heterogeneity. The heatmap shows the Z-scored measurements for 12 features, across 16 antigens for both refractory and responsive patients, visualized with joint fluid measurements in the upper half of the heatmap and serum measurements in the lower half of the heatmap. Only antigens detected above background for at least 30% of samples were included for each measurement. Statistical significance was assessed using the Mann-Whitney nonparametric test, with p values then corrected for multiple hypothesis testing via Benjamini-Hochburg, *p < 0.05, **p < 0.01, ***p < 0.001, else not significant. CRASP1 (p/n 000-001-C18), CRASP2 (p/n 000-001-C19), DbpA (p/n 000-001-B98), DbpB (p/n 000-001-C16), Arp37 (p/n 000-001-C09), flagellin (p/n 000-001-C14), OspA (p/n 000-001-C13), OspB (p/n 000-001-C15), OspC (p/n 000-001-C11), OspE (p/n 000-001-C10), p27 (p/n 000-001-C30), p35 (p/n 000-001-C12), p39 (p/n 000-001-C17), VlsE (p/n 000-001-C33). Fig 1. PMID: 38303696.

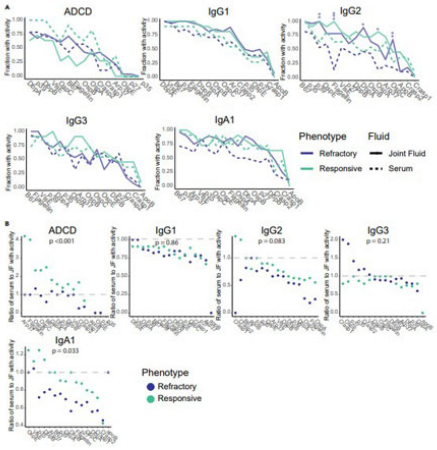
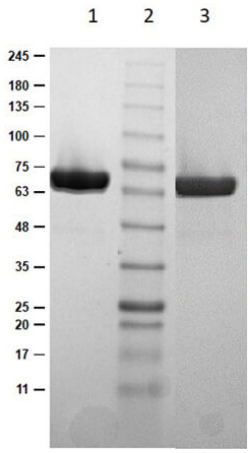


Figure
Antigen-specific IgG2, IgA1, and ADCD partitioning between compartments differs significantly across disease phenotypes. (A) Fraction of samples with non-zero measurements for ADCD, IgG1, IgG2, IgG3, and IgA1 for refractory (dark blue) and responsive (green) patients in the serum (dashed line) and joint fluid (solid line) for each antigen. Significant differences in distribution of non-zero measurements between fluids as assessed by a Fisher's exact test are denoted as *p < 0.05, **p < 0.01, ***p < 0.001 for refractory (dark blue) and responsive (green) samples after correction for multiple hypothesis testing via Benjamini-Hochburg. (B) Ratio of fraction of serum samples with non-zero measurements to fraction of joint fluid samples with non-zero measurements for ADCD, IgG1, IgG2, IgG3, and IgA1 for refractory (dark blue) and responsive (green) patients for each antigen. Significant differences in distributions of ratios between phenotypes are assessed by a Mann-Whitney nonparametric test, then corrected for multiple hypothesis testing via Benjamini-Hochburg. CRASP1, CRASP2, DbpA, DbpB, Arp37, flagellin, OspA, OspB, OspC, OspE, p27, p35, p39, VlsE: Rockland antigens. Fig 6. PMID: 38303696.



SDS-PAGE
SDS PAGE Results of OspC Control Protein. Lane 1: OspC Control Protein Non-Reduced [10µg]. Lane 2: Opal Prestained Molecular Weight Marker (p/n MB-210-0500). Lane 3: OspC Control Protein Reduced [10µg]. 4-20% Gel, Coomassie Stained.

References

- Bowman KA. et al. Borrelia-specific antibody profiles and complement deposition in joint fluid distinguish antibiotic-refractory from -responsive Lyme arthritis. *iScience.* (2024)
- Haslund-Gourley BS. et al. Host glycosylation of immunoglobulins impairs the immune response to acute Lyme disease. *eBioMedicine.* (2024)

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