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- Trockeneiszuschlag
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- Expressversand

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Datasheet for 000-001-C16

DbpB Control Protein

Overview

Description:	DbpB Control Protein - 000-001-C16
Item No.:	000-001-C16
Size:	100 µg
Applications:	SDS-PAGE, WB, Biochemical Assay
Origin:	Borrelia burgdorferi
Expressed in:	E. coli

Product Details

Background:	Decorin-binding protein B, or DbpB, binds to decorin, which may mediate the adherence of B. burgdorferi to collagen fibers in skin and other tissues. Spirochetal surface adhesions mediate attachment to decorin, a major component of the host extracellular matrix enabling bacteria to colonize in mammalian tissues. The spirochete migrates from the tick midgut during feeding to its salivary glands and are thus transmitted to the mammal host. This transition may be facilitated by changes in expression of some B. burgdorferi genes. It is believed that expression of the various proteins associated with the spirochete may be regulated by the changes in tick life cycle, changes in conditions during tick feeding (such as temperature, pH, and nutrients) and/or in coordination with the course of infection of the mammal host. Borrelia burgdorferi can colonize multiple tissues, and is capable of attachment to diverse cell types. The expression of decorin-binding protein (Dbp) A and/or DbpB, two B. burgdorferi surface proteins that bind GAGs, is sufficient to convert a high-passage nonadherent B. burgdorferi strain into one that efficiently binds 293 epithelial cells. Lyme disease proteins are ideal for researchers interested in immunology, neurology, rheumatology, coinfections, autoimmune, and neurodegenerative diseases.
Synonyms:	Decorin-binding protein B, Borrelia burgdorferi DbpB, control protein, DbpB Control Protein
Species of Origin:	Borrelia burgdorferi
Expressed in:	E. coli
Type:	Recombinant Protein

Target Details

Gene Name:	dbpB, BB_A25

Purity/Specificity:	DbpB is a fusion protein synthesized with an MBP tag and was expressed in E. coli. Analysis by SDS-PAGE resulted in a pattern consistent with purified DbpB and was estimated to be greater than 90% pure.
Relevant Links:	• UniProtKB - P0CL68 • NCBI - WP_010890381.1 • GeneID - 1194341

Application Details

Tested Applications:	SDS-PAGE, WB
Suggested Applications:	Biochemical Assay (Based on references)
Application Note:	DbpB protein has been tested by SDS-PAGE and Western blotting and is suitable as a control in other immunological assays. Specific conditions for reactivity should be optimized by the end user. Expect bands at 60.3 kDa for DbpB-MBP, (17.9 kDa for DbpB and 42.4 kDa for MBP) in size corresponding to DbpB 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:	User Optimized
WB:	User Optimized

Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.0 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 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

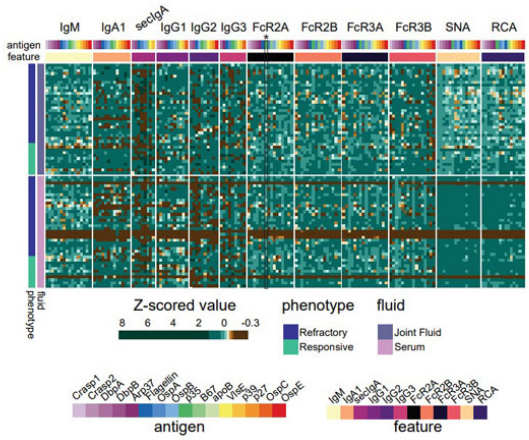


Figure
Systems serology profiling with Borrelia-specific antigens reveals patient heterogeneity. The heatmap shows the Z-scored measurements for 12 features, across 16 antigens for both refractory and responsive patients, visualized with joint fluid measurements in the upper half of the heatmap and serum 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.

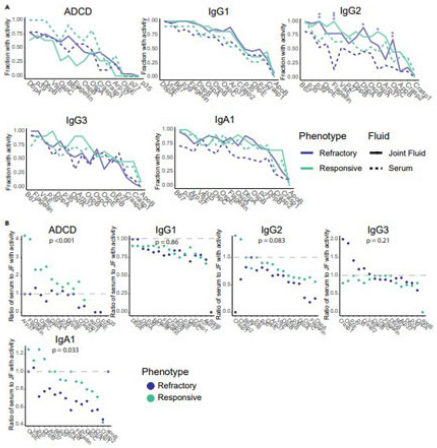
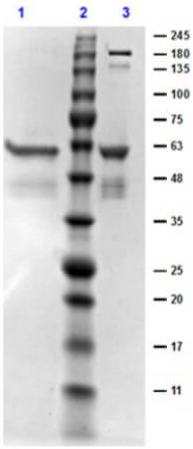


Figure
Antigen-specific IgG2, IgA1, and ADCD partitioning between compartments differs significantly across disease phenotypes. (A) Fraction of samples with non-zero measurements for ADCD, IgG1, IgG2, IgG3, and IgA1 for refractory (dark blue) and responsive (green) patients in the serum (dashed line) 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 DbpB Control Protein. Lane 1: DbpB Control Protein Reduced [1µg]. Lane 2: Opal Prestained Molecular Weight Marker (p/n MB-210-0500). Lane 3: DbpB Control Protein Non-Reduced [1µg]. 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)

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Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.