

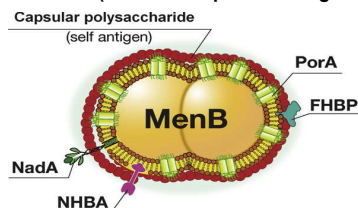
Product Specification Sheet

Meningitis B Neisserial adhesin A antibodies and controls

- Cat # MBNA21-S
- Cat # MBNA21-C

Rabbit Anti-Meningitis B Neisserial adhesin A (MenB NadA) antiserum SIZE:100 ul
Recombinant Meningitis B Neisserial adhesin A (MenB NadA) protein control for western blot SIZE:100 ul

Meningococcal meningitis, a form of meningococcal disease, which is a serious bacterial infection, is caused by bacteria called *Neisseria meningitidis* also known as meningococcus. It causes meningitis, meningococemia, septicemia, and rarely carditis, septic arthritis, or pneumonia. It can potentially kill an otherwise healthy young person within a few days after the first symptoms appear. *N. meningitidis* colonizes the mucosa of the nasopharynx in 5 to 10% of the population, and in susceptible individuals the bacterium can cross the epithelial layer into the bloodstream, causing septicemia and/or meningitis. Meningitis is life-threatening because of the inflammation's proximity to the brain and spinal cord; therefore the condition is classified as a medical emergency. *Neisseria meningitidis* has 13 clinically significant serogroups classified according to the antigenic structure of their polysaccharide capsule. Six serogroups, A, B, C, Y, W135 and X are responsible for virtually all cases of the disease in humans. The capsular polysaccharide of Men B is a self antigen that cannot be used to make a vaccine. The antigens selected by reverse vaccinology were prioritized based on their ability to induce broad protection. The proteins that met these criteria were called **Genome-derived Neisseria Antigens**. The most abundant antigen is **Porin A (PorA)** determines the serosubtype which is variable and induces only strain-specific protection. Less abundant but more conserved antigens are **fHbp (factor H-binding protein) NadA (Neisseria adhesin A) and NHBA (Neisseria heparin-binding antigen)**.



fHbp (GNA1870,282 a.a) is a surface exposed lipoprotein that binds human factor H, enhancing the ability of the bacterium to resist complement-mediated killing. It is classified into 3 genetic and immunogenic variants: fHbp-1, fHbp-2 and fHbp-3, which are not cross-

protective. **NadA (GNA1994, 362 a.a)** is an adhesin that was included in the MenB vaccine as single trimeric soluble protein, devoid of the membrane anchor domain. NadA is well conserved, and five variants have been identified. NadA-1, NadA-2, and NadA-3 show highly conserved sequences. NadA-4 and NadA-5 are less common, and are associated with carrier strains. **NHBA (GNA2132, 427 a.a)** is a surface-exposed lipoprotein which binds heparin in vitro through an arginine-rich region. The NHBA domain fold consists of an 8-strand β -barrel that closely resembles the C-terminal domains of *N. meningitidis* factor H-binding protein and transferrin-binding protein B. This common fold together with more subtle structural similarities suggest a common ancestor for these important antigens and a role of the β -barrel fold in inducing immunogenicity against *N. meningitidis*.

Bexsero® a four-component vaccine (called **4CMenB**) is the first broadly effective MenB vaccine for all age groups, including infants who are among the most vulnerable. Current vaccines [Menveo® (Novartis) and Menactra® (sanofiPasteur)] available for the other four major disease causing meningococcal serogroups (A, C, Y and W135) were developed by using the outer polysaccharide capsule as an antigen target.

Source of Antigen and Antibodies

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|------------------------|--|
| Antigen | Recombinant purified Neisserial adhesin A (cat#MBNA25-R-10) |
| Ab Host/type | Rabbit, Polyclonal antiserum (cat#MBNA21-S) supplied in supplied in PBS, pH 7.4, 0.1% azide as preservative. |
| 2-Ab | Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates) |
| -ve control IgG | #20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control. |

Cat # MBNA21-C, Positive Control

Men B NadA. protein was expressed in *E. Coli* as a his-tag fusion protein (full length, >95%, ~36 kDa). Purified protein for Western blot +ve control (cat# MBNA21-S) is supplied in SDS-PAGE. Store at -20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should re dissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the # MBNA21-S solution prior to heating and loading on gels. This preparation is

not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly.

Form & Storage of Antibodies/Peptide Control

Antiserum
 100 ul solution lyophilized powder
 Buffer: PBS+0.1% azide
Reconstitute powder 100 ul of PBS.

Storage
Short-term: unopened, undiluted vials for less than a week at 4oC.
Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.
Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

Western Blotting: An initial dilution of 1:500-2K is recommended for Western. Users must optimize antibody dilution depending upon the nature of samples and other technical conditions.

ELISA (1:10-50K; using 50-100 ng antigen/well).

Histochemistry & Immunofluorescence: not tested.

Specificity & Cross-reactivity: This antibody reacts with Meningitis B Neisserial adhesin A and recombinant protein. Cross reactivity with other proteins has not been established. Antibodies and recombinant proteins for various Men B antigens are available for control studies.

References: Veronica E (2011) *J Biol Chem* 286: 41767-41775; David M. Vu (2011) *Vaccine* 29: 1968-1973. Miguel O (2014) *Drugs* ;74: 15-30.; Seil KL (2009) *Infect Immun.* 77(1): 292-299. Massignani (2003) *JEM* 197 (6): 789

*This product is for In vitro research use only.

Related material available from ADI

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|-------------|--|
| MBFH11-C | Recombinant Meningitis B factor H binding protein (MenB fHbp) control for western blot |
| MBFH11-S | Anti-Meningitis B factor H binding protein (MenB fHbp) antiserum |
| MBFH15-R-10 | Recombinant (E.coli) Meningitis B factor H binding protein (his tag, 35 kDa) purified |
| MBNA25-R-10 | Recombinant (E.coli) Meningitis B Neisserial adhesin A (MenB NadA) protein (his tag, 36 kDa) purified |
| MBNH31-C | Recombinant Meningitis B Neisserial Heparin-Binding Antigen (MenB NHBA) protein control for western blot |
| MBNH31-S | Anti-Meningitis B Neisserial Heparin-Binding Antigen (MenB NHBA) antiserum |
| MBNH35-R-10 | Recombinant (E.coli) Meningitis B neisserial adhesin A (MenB NadA) protein (his tag, 43 kDa.) purified |
| MBPA41-C | Recombinant Meningitis B Porin A (MenB PorA) protein control for western blot |
| MBPA41-S | Anti-Meningitis B Porin A (MenB PorA) antiserum |
| MBPA45-R-10 | Recombinant (E.coli) Purified Meningitis B Porin A (MenB PorA) protein (his tag, 36kDa) purified |
| 600-900-HNG | Human Anti-Meningitis B Neisserial adhesin A (NadA) IgG ELISA kit, 96 tests |
| 600-905-MNG | Mouse Anti-Meningitis B Neisserial adhesin A (NadA) IgG ELISA kit, 96 tests |

MBNA21-S-MenB-NadA 151124SV