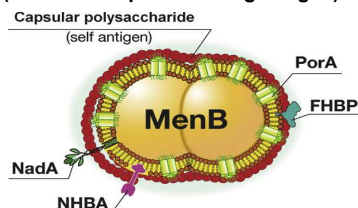


Product Specification Sheet

**Recombinant Meningitis B neisserial adhesin A (MenB NadA)**

□ Cat # MBNA25-R-10      Recombinant (E.coli) Meningitis B neisserial adhesin A (MenB NadA) protein (his tag, 36 kDa) purified      SIZE: 10 ug

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 proteins that have the ability to induce broad protection 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)**.

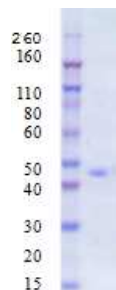


**fHbp (GNA1870,282 aa)** is a surface exposed lipoprotein that binds human factor H, enhancing the ability of the bacterium to resist complement-mediated killing. It is classified into 3 genetic and immunogenic variants:

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  $\beta$ -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  $\beta$ -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**



Men B NADA protein was expressed in *E. Coli* as a his-tag fusion protein (full length, >95%, ~36Da).

Purified protein is supplied in 3mM Na<sub>2</sub>HPO<sub>4</sub>, 0.5mM KH<sub>2</sub>PO<sub>4</sub> [pH 7.4], 1mM KCL, 0.4M NaCl, 1mM  $\beta$ -ME, 0.2mM EDTA, 0.04% Sarkosyl and 0.1M Imidazole.

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

**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:** load 100-200 ng/well.

**ELISA:** (50-100 ng antigen/well).

**Specificity and cross reactivity:** Meningitis B neisserial adhesin A exhibits sequence variability among variants. Cross reactivity has not been studied. Antibodies and recombinant proteins from various Men B antigens are available for control studies.

**References:** Clin Vaccine Immunol. (2014) 21(7): 966–97; 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**

Catalog#	Prod Description
MBFH11-C	Recombinant Meningitis B factor H binding protein (MenB fHbp) control for western blot
MBFH11-HNC	Human Meningitis B factor H binding protein (MenB fHbp) antibody negative control serum
MBFH11-HPC	Human Meningitis B factor H binding protein (MenB fHbp) antibody positive control serum
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
MBNA21-C	Recombinant Meningitis B Neisserial adhesin A (MenB Nad A) protein control for western blot
MBNA21-HNC	Human Meningitis B neisserial adhesin A (MenB Nad A)antibody negative control serum
MBNA21-HPC	Human Meningitis B neisserial adhesin A (MenB Nad A) antibody positive control serum
MBNA21-S	Anti-Meningitis B Neisserial adhesin A (MenB Nad A) antiserum
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-HNC	Human Meningitis B neisserial heparin-binding antigen (MenB NHBA) antibody positive control serum
MBNH31-HPC	Human Meningitis B neisserial heparin-binding antigen (MenB NHBA) antibody positive control serum
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
600-950-H4G	Human Anti-Meningitis B antigens (PorA+ NADA+fHbp+NHBA) combo IgG ELISA kit, 96 tests
600-955-M4G	Mouse Anti-Meningitis B antigens (Por A+ NADA +fHbp+ NHBA) combo IgG ELISA kit, 96 tests
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

MBNA25-R-10-MenB-Protein      USA; Email: [service@4adi.com](mailto:service@4adi.com)

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