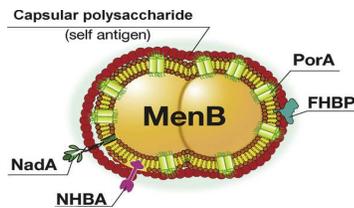


Product Specification Sheet

**Neisserial meningitis B Heparin Binding Antigen Antibodies and controls**

□ Cat # MBNH31-HNC	Human Meningitis B neisserial heparin-binding antigen (MenB NHBA) antibody negative serum	SIZE: 2 ml
□ Cat # MBNH31-HPC	Human Meningitis B neisserial heparin-binding antigen (MenB NHBA) antibody positive serum	SIZE: 2 ml

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 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 and Forms of Controls**

Human Men B NHBA protein antibody controls were prepared from human sera that were infected with the Men B virus or had antibodies due to natural infection. The controls are tested in ELISA using purified MenB NHBA protein coated plates.

Cat# MBNH31-HNC; MenB NHBA antibody –ve control

Human serum in a stabilizing buffer supplied as liquid (2 ml) or in lyophilized form. Reconstitute powder with 2 ml distilled water. When tested undiluted the –ve control yielded NHBA antibody ELISA # 600-920-HHG A450=<0.400. For testing in other ELISAs or applications, users must determine the sample dilutions.

Cat# MBNH31-HPC; MenB NHBA antibody +ve control

Human serum in a stabilizing buffer supplied as liquid (2 ml) or in lyophilized form. Reconstitute powder with 2 ml distilled water. When tested, undiluted +ve control yielded NHBA antibody ELISA # 600-920-HHG A450=>1.500. For testing in other ELISAs or applications, users must determine the sample dilutions.

**Store** –ve or +ve controls at 4°C for 1-3 months or store frozen at -20°C in suitable size aliquots.

**Stability:** 6-12 months at –20°C or below.

**Shipping:** 4°C for solutions and room temp for powder.

**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. Masignani (2003) JEM 197 (6): 789

\*This product is for In vitro research use only.

**Related material available from ADI**

Catalog#	Prod Description
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
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-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
MBNH31-HNC-MenB-Neisserial-Heparin	151124SV