ALPHA DIAGNOSTIC INTERNATIONAL

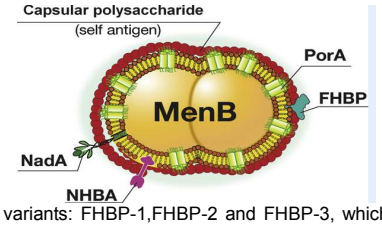
Product Specification Sheet

Meningitis B factor H binding protein (MenB fHbp) Positive and negative Controls

□ MBFH11-HPC	Meningitis B factor H binding protein (MenB fHbp) **positive control serum**	**Size**:2 ml
□ MBFH11-HNC	Meningitis B factor H binding protein (MenB fHbp) **negative control serum**	**Size**:2 ml

Meningococcal meningitis, a form of meningococcal disease, is a serious bacterial infection. It causes meningitis, meningococcemia, septicemia, and rarely carditis, septic arthritis, or pneumonia. Unlike viral meningitis, it can potentially kill an otherwise healthy young person within a few days after the first symptoms appear. Meningitis is inflammation of the protective membranes covering the brain and spinal cord, known collectively as the meninges. It 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 **PorA,** which is variable and induces only strain-specific protection. Less abundant but more conserved antigens are **FHBP (factor H-binding protein)** FHBP **(Neisseria adhesin A) and NHBA (Neisseria heparin-binding antigen)**.



FHBP (or **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, and can be further divided into sub variants FHBP-1.x, FHBP-2.x and FHBP-3.x. FHBP **(**or **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. FHBP is well conserved, and five variants have been identified.FHBP-1, FHBP-2, and FHBP-3 show highly conserved sequences FHBP-4 and FHBP-5 are less common, and associated with carrier strains. **NHBA (or 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.

A multi component vaccine against serogroup B meningitis **Bexsero®** (**4CMenB**),has just completed phase III clinical trials in infants. There are currently 3 vaccines available in the US, all quadrivalent in nature, targeting serogroups A, C, W-135 and Y. Two conjugate vaccines (**MCV-4**), **Menactra** (Polysaccharides conjugated to Diphtheria Toxoid) and **Menveo** (Conjugated to toxoid diphtheria mutant CRM197); One polysaccharide vaccine (**MPSV-4**), **Menomune,** produced by Sanofi Pasteur; **Mencevax** (GlaxoSmithKline, CRM197 conjugate) and **NmVac4-A/C/Y/W-135** (JN-International Medical Corporation, conjugated to Diphtheria Toxoid) are used worldwide, but have not been licensed in the United States.

Source and Forms of Controls

Human Men B FHBP 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 FHBP protein coated plates.

Cat# MBFH11-HNC; MenB FHBP 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 FHBPantibody ELISA # **600-910-HFG** A450=<0.400. For testing in other ELISAs or applications, users must determine the sample dilutions.

Cat#FHBP11-HPC; MenB FHBP 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 +v control yielded fHbp antibody ELISA # **600-910-HFG** 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-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

MBFH11-HPC-MenB-FactorH 151124SV

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