ALPHA DIAGNOSTIC INTERNATIONAL

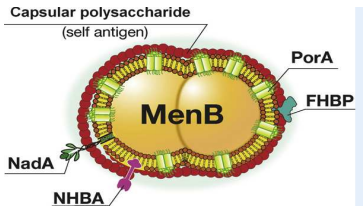
LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

Recombinant Purified Meningitis B factor H binding protein (MenB fHbp)

☐ **Cat #** MBFH15-R-10 Recombinant (E.coli) Meningitis B factor H binding protein (MenB fHbp) (his tag, 35 kDa) purified **SIZE**: 10 ug

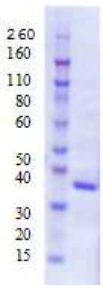
Meningococcal meningitis, a form of meningococcal disease, which is a serious bacterial infection, is caused by bacteria called Nisseria meningitidis also known as meningococcus. It causes meningitis, meningococcemia, septicemia, and rarely carditis, septic arthritis, or pneumonia. It can potentially kill an otherwise healthy young person within a few days after the first symptoms appear. *N. meningitides* 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



Men B fHbp protein was expressed in E. Coli as a his-tag fusion protein (full length, >95%, ~35 KDa).
Purified protein is supplied in 3mM Na2HPO4, 0.5mM KH2PO4 [pH 7.4], 1mM KCL, 0.3M NaCl, 0.9 mM β-ME, 0.2mM EDTA, 0.03% 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: fHbp exhibits sequence diversity among isolates. Cross reactivity between strains has not been studied. Antibodies and recombinant proteins to other Men B antigens are available for control studies.

References: Infect. Immun.(2011) 79,(2) 970-981 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

MBFH15-R-10-MenB-factorH 150319

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com